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THE

ELEMENTS OF STRATEGY

BY THE LATE

LIEUT.-COLONEL TOVEY, R.E.

INSTRUCTOR IN MILITARY HISTORY, STRATEGY, AND TACTICS AT THE SCHOOL OF MILITARY ENGINEERING, CHATHAM

NEW EDITION

REVISED AND EDITED BY

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PUBLISHER'S PREFACE

This work, written by the late Lieutenant-Colonel Tovey R.E., was originally issued as an official publication in 1887. It has been out of print for several years, and, realising that such a book, at a price that would bring it within the reach of all military officers, would supply a much-felt want, the present publishers approached H.M. Stationery Office, asking permission to republish it. This permission was most kindly granted.

It has been carefully edited and brought up to date by Dr. T. Miller Maguire, who is also entirely responsible for the Introduction and Chapter X. (Strategy as Influenced by Climate), and also for the outlines of the Franco-German War and the operations in Virginia, which appear at the end of the present edition.

PREFACE

BY THE LATE LT.-COL. TOVEY, R.E.

The following notes were written to assist the author in carrying out his duties as Instructor at the School of Military Engineering; they have been printed in order to form a basis for the instruction at that Institution in the subjects dealt with, and to avoid the necessity, on the part of those officers under instruction, for the taking of copious notes during lectures. The author is not without hope that other military students, and officers engaged in instructing in these subjects, may find the notes of some little use.

Apology must be made for the didactic tone assumed, which is more or less unavoidable in an Instructor. It is feared also that on many points the notes may seem too diffuse and wanting in clearness, a defect difficult to avoid where, as in this case, the personal opinion of the author has little value, and nearly all statements have to be supported by quotations from authorities of acknowledged weight.

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LIST OF REFERENCES

The following are some of the authorities consulted and quoted with the short titles by which they are referred to in the text:

REFERENCE	NAME OF WORK
M. . . .	Manual of Military Law.
Bornecque . .	Rôle de la Fortification dans la dernière Guerre d'Orient. Par J. Bornecque, Capitaine du Génie.
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INTRODUCTION

It is not my purpose to refer to the recent South African War except very occasionally and for general purposes of illustration. It contained no new lessons from a strategic point of view. Indeed, the principles of Strategy are as old as regular warfare.

But in any case, examples drawn from the recent history of the writer's own country about military positions and arrangements which are matters of warm controversy are not very suitable for educational purposes. It would be difficult to keep all prejudice out of the minds of students. Nor can I pretend to regard the systems under which the late war was waged without very strong feelings indeed. In common with many of my friends I have very bitter memories of the consequences of the neglect of the very first principles of the art of war on the part of our Government.

It is, however, necessary to point out that though politicians must control, and be responsible for, the preparation for war, and the cause of war, and declaration of war, yet for politicians to attempt to control strategy, once the first shot is fired, or the frontier is crossed, is to fly in the face of the plainest teachings of modern history.

Party politicians have ruined the reputation of many a fine General. Thus the career of our greatest General, Marlborough, was checked in the full tide of its glory. Politicians were responsible for the failures of many commanders in the campaigns of the American Civil War till Grant, Sheridan, and Sherman determined that they would conduct the war in their own way or resign.

MacMahon was involved in the disaster of Sedan, in spite of his wishes and his protests, by the wire-pullers of Paris; and our Peninsular annals are full of the records of ministerial incapacity, which was fraught with suffering for our soldiers by the banks of the Tagus and the Pisuerga.

The present Commander-in-Chief, presiding at a lecture of mine in Dublin in 1898, said that "the necessity for preparation for war in peace time was the most certain oracle of time." He thereby repeated for our people the lesson which has been writ large, not only in the immortal phrases of the greatest philosophers and orators like Bacon and Burke, but in awful records of frequent recurrence and in the slow or sudden ruin of flourishing communities.

Lord Roberts has also emphasised lately in his official position the necessity for thoroughly understanding the conditions of any war before entering upon it, and of having a sound initial plan with ample resources for its effective execution. He insists upon the knowledge of general history, geography, and the outlines of strategy. Indeed, without this knowledge, neither politician nor soldier is fit for any post of responsibility in any modern State.

Lords Wolseley and Roberts therefore agree not only with Napoleon, Wellington, Moltke, and Suwarrow, but also with Alexander the Great and Julius Cæsar, who were both highly accomplished in all the learning of their times, and with Sherman, Lee, and Jackson, who were severe students, and whose very campaigning orders are full of historical references.

Neglect of the study and of the efficient practice of the art of war means national decay, swift and irretrievable. But it seems that those of us who have striven for years to bring home these truths to our people—are likely to remain voices crying in the wilderness.

Whether in the rising or in the decline of great empires, whether the creed be Paganism or Christianity or Islam, nothing can dignify or maintain a State except readiness for the resolute and timely application of military force by sea and land.

Yet the principles upon which the successful use of this tremendous instrument of power—this hammer of Thor —is based are simple indeed, and any intelligent man should find no difficulty in mastering them.

But these principles can no more be neglected with impunity than can the laws of morality or of hygiene. Continued neglect of any of these means certain suffering and national death.

We can never go far wrong if we hearken attentively to the voice of the first Napoleon when his "myriad-minded" intelligence was not obscured by passion or by greed. All his utterances by way of comment on the past or of musings on the future were dry light of "purest ray serene."

Napoleon said: "In forming the plan of a campaign it is requisite to foresee everything the enemy may do, and to be prepared with the necessary means to counteract it." He also said: "All wars should be governed by certain principles, for every war should have a definite object and be conducted according to the rules of art. War should only be undertaken with forces proportionate to the obstacles to be overcome." And he further said: "War is not a conjectural art —it is a business." Even as knowledge is power in every other profession, so is a military education; training betimes of mind and body in readiness for the conduct of war is the most essential condition for success in the most important of all careers. But, unfortunately, what the historian Alison wrote concerning our wars against the French Republic and Empire is now equally true: "Nor is the English system of education and government without an important, and what often proves a disastrous, influence on the national fortunes in the commencement, and sometimes through the whole course, of hostilities.

"Young men too often enter the houses of Lords and Commons perfectly initiated in the loves of Dido and Æneas, of Mars and Venus; perhaps skilled in forensic debate, and happy in Parliamentary allusions; but as ignorant of the means by which success is to be attained or disaster averted in war as the child unborn."

And commenting on the waste of our military resources, 1805–1815, he says: "Statesmen are raised to the supreme direction of affairs often from talent in speaking, or readiness in reply, rather than from any practical knowledge they possess either of the civil or military duties with the direction of which they are entrusted. Power in debate is the one thing needful; but power in debate is not statesmanlike wisdom. It is often acquired by habits little conducive to it, and it differs as much from the able direction of an expedition or a campaign, as the skill in a tournament of Amadis de Gaul or Palmerin of England does, from the consummate genius of Wellington or Napoleon."

It has been laid down by every one of our leading soldiers of every generation that intellectual training is more valuable to officers than is physical power, and that efficient soldiers in small numbers can destroy hordes of "men with muskets."

In war, more than in politics, the epitome of success is "secrecy in council and celerity in execution"; but, as Gambetta said, and also experienced to his cost, *on ne peut pas improviser le succes.*

I do not make lengthy quotations from, or frequent reference to, German treatises on the art of war. These are most valuable and instructive, but they are based on considerations of long land frontiers, conterminous with rival States for hundreds of miles, and from twenty to forty days marching of the enemy's capital, and within a few days marches of tremendous systems of hostile fortifications.

All knowledge is valuable, and let us study German methods of efficiency both in education and in the art of war, but Germany is not an insular Power, and such able authorities as Bronsart von Schellendorf and Von der Goltz are at pains to prove that their views on military organisation cannot apply to our Empire.

Sometimes Von der Goltz congratulates the United Kingdom on not being situated as is Germany, and sometimes he ridicules the notion that our Army is now, or ever can be, similar to that of France or Germany. Further, he admits

that the whole elaborate military organism of a continental State is dangerous to an awful degree, and may collapse when a profound and daring genius with a smaller army of perfectly-trained patriots or fanatics appears on the scene, or may be pressed out of existence by the bulk of its own colossal magnitude.

It is not about our Army that he writes when he says: "Let us tentatively set the present German Army in march upon a road. Of the cavalry divisions, which we here likewise place at the head, each is two-thirds of a German mile in length. Then come the Army Corps. Even if all the corps closed up in marching order, rank close on rank, and waggon after waggon, yet, in order to make secure, we should be obliged to cover one hundred German miles for the whole eighteen. Besides these there are the *oberkommandos*, with their staffs and trains; further, the Army Administration Department, so far as is not included in the Army Corps, and much more besides. To our astonishment, a computation of the whole together would show us that if the head of the column were marching into Mayence upon the Frankfort road, the last company would only just be leaving Eydtkuhnen upon the Russian frontier. The whole military road from the Rhine to the Russian frontier would have been thickly crowded with soldiers, guns, and transports. If these were made to pass out through a single gateway, day and night, it would take a fortnight for all to pass through."

Again this is not our Army: "Enormous, too, would be the front which the gigantic armies of to-day would present were they developed in one single line. The French Army would reach from Epinal to Verdun."

Again he does not refer to British battles when he says: "In the battle of the future 300,000, nay, even 400,000 combatants will oppose each other," although we were able to put 400,000 men and the same number of animals across the sea into South Africa.

But now this distinguished German refers to us very distinctly indeed: "As a rule a mid-European country is always

assumed to be the theatre of a war. A war in the Steppes of Asia, and in the tropical climes of Africa, is quite different in its nature to one in Germany, France, Italy, and so forth. *Only what affects us closely demands our attention.*" Would that Britons would follow the example set by the words which I put in *italics*.

It is with the object of conveying shortly the main principles under which only this business of war can be successfully conducted that this work is being re-issued. In my own "Notes on Strategy," which are now out of print, I made no claim to originality, and I explained that, though obliged by circumstances to consider the subject for half of a busy life, I made no pretence to be more than a mere compiler. In this treatise I am manifestly only an editor, having received permission to edit and expand the notes of Colonel Tovey by the courtesy of the authorities under whose patronage they were first issued.

Napier says: "War tries the strength of the military framework; it is in peace that the framework itself must be formed, otherwise barbarians would be the finest soldiers in the world." Burke says: "War never leaves a nation where it found it." If any of my readers are induced by this treatise to undertake further studies in the methods of forming an effective military machine for our Empire, and to search for themselves the masterpieces of military literature, my object will be attained and my reward will be ample.

I find that since I wrote this introduction my views as to the lessons of the South African war have been strongly supported by General Von der Goltz in the *National Review* of November, as follows:—

"In South Africa there were only four railway lines leading into the tract concerned, namely, from Cape Town, Port Elizabeth, East London, and Durban. Into Poland and Russia, on the other hand, there are twelve: Eydtkuhnen, Crajewo, Illowo, Alexandrowo, Kalisch, Czenstochan, Gracow,

Sosnowice, Myslowitz, Lemberg, Tarnopol, and Czernowitz. So we find that even that part of Europe which is most poorly provided with railways is three times more accessible than the theatre of war of the late Boer Republics.

"The march of the Boers into Natal, against Kimberley and Mafeking, with smaller detachments sent to Komatiport and the northern frontier towards Rhodesia, is roughly the same as if a Russian corps of 20,000 men from Bessarabia and the northern parts of Moldau, invaded the Austro-Hungarian country towards Czernowitz, while forces, each 6000 men strong, crossed the frontier at Cracow and Thorn, and scouting parties were pushed forward at the same time towards Moscow and the Crimea. Such operations are to be found on our continent in the Swedish wars with Poland or the still earlier campaigns of the Middle Ages, but not in one of the later wars. Imagine for example, an Eastern war nowadays between the Black Sea and the Baltic. Before the outbreak of hostilities the districts close along both sides of the frontier would be occupied by a long line of Army Corps, and all the roads leading thence to the front would soon be covered with long marching columns. Before the concentration for the battle ensued there would be hardly a vacant space remaining on which there were not troops.

"From this comparison of theatres of war and armies it may be already realised that the procedure in the South African War cannot be directly applied to future wars in Europe, and that it would be labour in vain to seek there for lessons as to the best manner of conducting the advance to our frontiers or for the operations with the gigantic armies of the present day.

"The useful strategical lessons are to be found chiefly in the fresh confirmation of old precepts and principles."

T. MILLER MAGUIRE.

10 Earl's Court Square,
November 27th, 1903.

THE ELEMENTS OF STRATEGY

CHAPTER I

WAR, ITS NATURE AND CAUSES

In treating of the Art of War, it is perhaps desirable to make certain in the first place that we have a clear idea of what war is.

Definition of War.—War may be defined as a conflict between States, or parts of States, who, acknowledging no common superior, and unable to come to a mutual agreement, determine to decide their differences by a resort to physical force.

The Object of War.—This is described to be, politically speaking, "the redress by force of a national injury," and in a military point of view to be "to procure the complete submission of the enemy at the earliest possible period, with the least possible expenditure of men and money."

Causes of War.—It is hardly necessary, in writing for soldiers, to make any excuse for the carrying on of wars. It is not our duty to decide whether any given war is or is not justifiable, it is sufficient for us that those to whom we owe allegiance demand our services.

Putting aside dynastic and personal ambition, in former days so fruitful a cause of war, and which has often been ascribed as its sole cause, it is evident on reflection that there are other and deeper causes at work.

Supposing that the world was at any given time entirely at peace, and with every nation contented, it might be that at that moment no cause existed able to produce war.

It is obvious, however, that this state could not last longer than the relative conditions of the various nations remained in equilibrium.

Now there are forces constantly at work to upset this equilibrium.

Some are internal, the product of ideas; some religious, some political—such was Judaism; such was Christianity, in its infancy, at the Crusades, and at the Reformation; such was Mohammedanism; such was the renaissance of liberty culminating in the French Revolution; such the idea of national unity or unity of race, which has so mightily affected Europe lately, and which is yet far from being worked out. Others remain, such as socialism, the real strength of which we have not yet true means of judging.

Some causes are external, such as climate and habitat, as affecting, through food, customs, and employment, the development of races. These are no doubt now working notably in the United States and in our colonies. Even if all white races were of one pacific mind we should soon feel the weight of coloured races.

Some causes of war have a mingled and more complicated origin, such as the break-up of the Roman Empire and of the Spanish, or as the fecundity of race affecting the rate of population. Instance the French, almost stationary in numbers, while the German, Anglo-Saxon, and Irish races are rapidly increasing and spreading over the world. Yet an unfortunate tendency to diminish increase is now apparent among the Anglo-Saxons.

Owing to some of the above-mentioned causes, there are, at any given time in history, certain forces at work tending to produce diversity of interest and consequent collision of States or races.

It is the work of the statesman to appreciate and guide these forces, either so as to avoid collision, or, where it is inevitable, to ensure its occurrence under circumstances favourable to the State.

Diversity of interests being inevitable, occasional wars are

certain to occur as long as human nature is what it is notwithstanding universal exhibitions and Hague conventions.

Preparations for War.—As long as wars are possible, nations must be prepared for them. To be unprepared, unless all are unprepared, would be to surrender liberty and give all power into the hands of the violent and unscrupulous. It would be to disband the police of the world, leaving the bandits to their own devices.

As a fact, nations do prepare for war. Never before in the history of the world have such vast hosts been organised, ready at a few weeks' notice to be launched against each other, as at the present moment. The Germans can now mobilise 200,000 men daily.

It being the duty of the statesman to ensure, by timely preparation, the safety of the State whose interests he serves, he should be able to estimate not only the *strength* of the causes tending to war, but the forces which, when war occurs, will come into play.

Here he needs the advice of soldiers—advice founded on knowledge of the military strength of nations, their armies, with their organisation, numbers, mobility, and military resources.

A knowledge is also required of the probable localities of war, of the modes of attack, the means of defence.

All this information should be collected in peace time and kept up to date. This was first pointed out by Jomini, was realised with wonderful results by Prussia, and has been copied by Great Britain—resulting in our present Intelligence Department, which is shamefully undermanned.

Jomini writes on this point—

"The general staff in times of peace should be employed in labour preparatory for all possible contingencies of war. Its archives should be furnished with numerous historical details of the past, and with all statistical, geographical, topographical, and strategic treatises and papers for the present and future. . . . Nothing should be neglected to acquire a knowledge of the geography and the military

statistics of other States, so as to know their material and moral capacity for attack and defence. . . . Distinguished officers should be employed in these scientific labours, and should be rewarded when they acquit themselves with marked ability."

The duty of an Intelligence Department is therefore to consider the various conditions under which the country may become engaged in war, to study the probable scenes of conflict, and the best mode by which such wars may be conducted to a successful issue. Mr. Spenser Wilkinson gives a clear account of these points in his "Brain of an Army."

Considerations determining War.—When some great question arises which may involve one nation in war with another, it has to be decided whether war shall be declared or not.

On the one side are the objects or advantages which it is desired to gain; on the other the sacrifices to be made to attain them.

The military advisers of the State are responsible that the statesmen who decide have full and accurate information respecting the military resources of the States concerned. It is evident, however, that something more than this is required to enable a correct judgment to be formed as to the probable issue; account must be taken of such considerations as the following, namely—

a. The bearing of neighbouring States, with a view to their neutrality or possible alliance with either side.

Instance.—The mistaken view of the French Emperior as to the attitude of South Germany in 1870, and our Cabinet's views as to the Orange Free State in 1899. In each of these cases very accurate military warnings were ignored.

b. The spirit in which the nation to be invaded will regard the war, a point which may greatly affect the issue.

Instance.—The invasion of Italy by the French in 1796 com-

pared with their invasion of Spain in 1808, or with that of Russia in 1812.

c. The spirit in which the people of the country itself will undertake the war.

Instance.—The enthusiastic rising of the French nation to resist invasion in 1793 compared with the lukewarm resistance of the same people, when exhausted by wars and deprived of self-government, to the invasion of 1814. Also with their defence against German invasion when distracted by political controversy and weakened by incompetent rulers in 1870; although the resistance of Paris was heroic. Gambetta's improvised armies failed to raise the siege because a *levée en masse* of untrained patriots must fail against a trained "nation in arms."

With a self-governing nation such as England, it is all-important that no war should be entered into which is not strongly backed by public opinion; otherwise the nation may decline to meet the sacrifices necessary to attain success, and the national interests be prejudiced by ignominious withdrawal under popular pressure or for party purposes, a policy fraught with peril to the Empire and prolific with the seeds of future wars—*e.g.*, Transvaal, 1881.

It is evident that such points as these are of vital importance, that on them may depend whether it is wise to go to war at all, and that when war is declared, its course may be, by such considerations, largely influenced, and its issue determined.

The consideration of them forms part of the art of war, and of that branch of the art of war known as "statesmanship or diplomacy in relation to war."

It is here that the art of the soldier and that of the statesman meet.

Political knowledge is required of the various nations concerned either directly or indirectly, their strength, their respective interests, and their probable bearing towards the combatants, not only at the commencement of the war, but while it continues and at its termination.

To possess this knowledge, and to estimate correctly the

resulting po itical situation, requires the powers and experience of the statesman; but to estimate the bearing of these political forces in their military aspect, and to design and carry out the system of operations in the field which will best reap the advantages or avoid the dangers resulting from them, requires the powers of a great military commander.

Thus we see that to successfully direct the military forces of a State in time of war requires the combined powers of a soldier and a statesman, and, as a fact, we find that all great captains have been so endowed. The names of Alexander the Great, Cæsar, Frederick the Great, Napoleon, will suffice to illustrate this.

Wellington's statesmanship was the only stable element in the chaos of Portuguese and Spanish politics, 1808 to 1814. British India also affords many examples of the able combination of strategy and statecraft.

CHAPTER II

THE ART OF WAR, ITS NATURE AND PRINCIPLES

> "The art of war is the practical adaptation of the means at hand towards the attainment of the object in view, *i.e.*, the defeat of the enemy."—VON MOLTKE.

WARFARE, whether on a grand scale, as in the conduct of armies, or on a small scale, as in the leading of troops, is an art. Like every art, it has its scientific side, but nevertheless it is far more a matter of skill than of science only.

Science, however, is of great value; it perfects the arms of the soldier and guides him to their proper use; it enables correct theories of warfare to be formed, drawing lessons from the events of former wars; it gives its possessor power more quickly to appreciate a situation, guides the gifted soul to right action, and guards fromsuperficial reasoning, which is very dangerous in war.

It is impossible to set up binding laws and rules for each case in war, for such cases are endless in their multiplicity, and the several circumstances of wars or battles are never repeated in precisely the same way. Quick appreciation of the situation and rapid determination to act are consequently necessary to the successful carrying out of every military operation; the one proceeds from natural talent, the other from education and practice.

The art of war differs markedly from most other arts in this, that success in conducting it depends principally on character. Quickness and power of resolve, firmness and energy in performance, equanimity of mind amid unexpected turns of fortune, whether good or ill—these are necessary qualities in every successful commander. But besides all this

and still more necessary is it that he possess that greatness of mind which will enable him, while feeling to the utmost the heavy responsibility he bears for the lives of thousands of men and the welfare of his country, to remain undismayed in the worst and most desperate situations. These qualities of mind were well set forth by the poet Addison in his eulogy of Marlborough.

There are certain fundamental principles of war which underlie all warlike operations, and which are thus stated by Jomini:

a. To throw, by strategic movements, the mass of an army, successively, upon the decisive points of a theatre of war, and also, as much as possible, upon the communications of the enemy, without compromising one's own.

b. To manœuvre to engage fractions of the hostile army with the bulk of one's own forces.

c. On the battlefield, to throw the mass of the forces upon the decisive point, or upon that portion of the hostile line which it is of the first importance to overcome.

d. To so arrange that these masses shall not only be thrown upon the decisive point, but that they shall engage at the proper times and with energy.

These definitions of Jomini, for purposes of easy recollection, and to enable the radical ideas to be grasped, go perhaps rather too fully into detail.

For a compendious definition, I have seen none better than that given by Col. C. B. Brackenbury in a recent lecture on Tactics, as follows:

"The whole art of war, whether conducted on the greatest or the smallest scale, is governed by one great principle, namely, to bring a superior force of one's own in contact with an inferior force of the enemy." The superiority may be either physical superiority, as in number, armament, &c., or moral superiority, which may be gained in many ways.

It is by the carrying out of these general principles success-

fully that victory is obtained; but, as has been already pointed out, to so carry them out is not a mere matter of proceeding on correct principles, but of doing so with greater skill than the enemy.

It is this necessity to out-wit and out-manœuvre the enemy which more than anything else makes the art of war one which requires the highest order of intellect to practise with success.

It is the fact that war is waged not with chess-men or krieg-spiel pieces, but with men, that requires in the commander not only intellect, but that undefined power by which men are swayed and governed -the power of tact, the power of judgment, accentuated where it exists by the power of attracting the affection and devotion of those commanded.

As Jomini says:

"War is not an exact science, but a drama full of passion, the moral qualities, the talents, the executive foresight and ability, the greatness of character of the leaders; and the impulses, sympathies, and passions of the masses have a great influence upon it."

The Armed Force the Instrument with which the Art of War is carried out.

The army, or armed forces of the State, forms, in wars waged on land, the instrument by which the military commander strives to attain the object of the war.

The value of these forces will be measured chiefly according to the following considerations:

a. Their numerical strength, excellence of composition, and armament.

b. The means of mobilisation and deployment on the scene of probable conflict.

c. The extent to which their defensive power may be increased by the nature of the country, and by fortresses.

d. The means possessed by the State in men and material to replenish the waste of war, and the speed with which these can be collected and sent forward.

The Offensive and Defensive in War.

Any conflict, whether a war in general or a particular combat, may be conducted offensively or defensively.

The mark of the offensive is, that in it the adversary is sought out, in order to subdue him; of the defensive, that the enemy is awaited, in order to resist him.

The offensive is the dealing of blows, the defensive the warding of them off.

It by no means necessarily follows in warfare that the strategic offensive or defensive should go hand in hand with the tactical offensive or defensive, although this is the rule. Offensive war may be conducted for defensive ends, and while repeated blows are dealt at the adversary, the war may still be conducted on defensive principles. In fighting savages the tactics must be offensive if possible.

The offensive and defensive may change repeatedly between the two parties during the war, or it may happen that both combatants undertake the offensive simultaneously. Simultaneous defensive action would, however, not lead to fighting.

Captain A. Mahan says:

"In the matter of preparation for war one clear idea should be absorbed first by every one who desires to see his country ready. This idea is that, however defensive in origin or in political character a war may be, the assumption of a simple defensive in war is ruin. War, once declared, must be waged offensively, aggressively. The enemy must not be fended off, but smitten down. You may then spare him every exaction, relinquish every gain; but till down he must be struck incessantly and remorselessly."

Offensive and Defensive War compared.

He who marches into the enemy's country wages offensive war; he who awaits in his own country the appearance of the adversary wages defensive war.

The advantages of defensive war comprise:

a. Intimate knowledge of the country, and the easy turning to account of such military advantages as it may offer.

b. The support of the fortresses and other artificial defences of the country.

c. The support afforded by the population to the defending army, resulting in better information as to the enemy, and popular resistance to his progress.

d. The easy bringing up of supplies and reinforcements, while the assailant is compelled to weaken himself by guarding his communications.

Among the advantages accruing to offensive war are—

a. The moral strength gained by the elation of the troops: on invading the enemy's country; on the probable gaining of the first successes, even though they may be small, and on driving back the enemy's troops of observation.

b. The advantage of possessing the initiative, with its power of choosing freely the place and time for action. The possibility of deceiving the enemy, surprising and falling upon him with concentrated strength, while the latter, in a condition of uncertainty, exposes himself to this danger by breaking up his forces to meet all possible attacks.

c. The maintenance of the armies at the cost of the enemy, while the country of the assailant is exempt.

d. In cases of success, the assailant has the positive advantage of the possession of the enemy's territory, while the defender in such case has only the negative advantage of having repulsed the invader.

From the foregoing it follows that offensive and defensive war have each certain advantages and disadvantages, but those of the offensive usually preponderate, especially for him who considers himself the strongest, is first prepared and most fully determined to bring about a decision.

The weaker side, needing assistance and wishing to delay matters, may choose the defensive, especially if the nature of the country favours it.

From a moral and political point of view the offensive is nearly always advantageous; it carries the war upon foreign soil, saves the assailant's country from devastation, increases his resources and diminishes those of his enemy, elevates the *moral* of his army while depressing that of the adversary, and gives to the offender the immense advantage attached to the initiative.

The defender has to follow the assailant's lead, is working greatly in the dark, and is too much absorbed by his defence to think of offensive measures. The assailant knows what he is about, while the defender has to wait on him.

If success is obtained by the assailant, and the defender struck in a vital point, he is deprived of his resources and compelled to seek a speedy termination of the war.

On the other hand, to carry on an offensive war, a highly organised army, with a large amount of transport and great resources, is necessary, from which it follows that only comparatively powerful States with great means at their command can undertake it properly.

Reasons which may Govern the Choice of the Offensive in War.

Among the principal reasons which may decide a belligerent to adopt offensive or defensive action in war may be mentioned the following, these considerations being either political or geographical, referring to the relative strength of the combatants, or the facility for mobilisation and concentration.

Political Considerations.—As an instance of these may be taken the Civil War between North and South America in 1861, in which the Confederates remained on the defensive, as they had declared they only wanted their independence and did not seek aggrandisement.

Geographical Considerations.—As an instance of this may be taken the case of an insular Power, such as Great Britain, possessing the command of the sea, where offensive action is essential to reach the enemy at all.

Inferiority in Resources.—As an instance of this may be quoted the war between Russia and Turkey in 1877, in which Turkey was compelled to adopt the defensive by reason of her inferiority in the numbers and the mobility of her armies.

Inferior State of Preparation.—The Franco-German War of 1870–71 affords an instance of this. In this war the French fully intended at first to assume the offensive, but their inferior organisation for mobilising and concentrating their troops allowed them to be forestalled by the Germans, and they were compelled to assume the defensive.

So with the British in South Africa at first. The Chinese in 1894 and the Spanish in 1898 were quite unprepared for carrying on war with any hope of success.

The Military Branches of the Art of War.

Apart from statesmanship or the diplomacy of the art of war, referred to in chap. i., the purely military portion of the art of war consists of three great branches :

a. **Military organisation,** which is concerned with the preparation of armies.

b. **Strategy,** which deals with the great movements which bring armies into the neighbourhood of the armies of an enemy.

c. **Tactics,** which may be defined as the art of handling the parts of an army when in close proximity to the enemy.

With military organisation we will not deal further here, as it is a study of itself, and requires separate treatment.

The operations of strategy and tactics are aided in their execution by two auxiliary arts, namely :

d. **Logistics**, or the art of moving armies, comprising the ordering and detail of marches and camps, and of quartering and supplying troops.

e. **Military Engineering**, the art of the military engineer; comprising the conduct of siege operations, the construction and maintenance of field telegraphs, roads, and railways; mining, bridging, surveying, and every other engineering operation which assists its own side and impedes the operations of the enemy.

To sum up: Strategy decides where to act, Logistics brings the troops up in the time and to the place decided on, Tactics lays down the mode of attack or the manœuvres proper to be carried out in the field of conflict, while the military engineer aids in all these operations.

CHAPTER III

HISTORICAL SKETCH OF THE ART OF WAR

The basis of all knowledge is experience; experience of recent events may be personal, but that of remote events can only be found in history. In the art of war, as in other arts, it is necessary, in order to understand its present state, to study that history in which the development of its present condition may be traced; without such knowledge rules and processes in use become in time unintelligible, are wrongly understood, and are not seldom misused with disastrous consequences.

Time and space do not allow a complete historical sketch of the art of war to be given in these pages; a brief *résumé* of that of the eighteenth and nineteenth centuries must suffice.

During the eighteenth century absolute monarchy flourished on the Continent of Europe. In the hands of the monarch were concentrated the legislative and executive power, and he governed according to laws imposed by himself.

In principle, no class of the nation had political rights, even individual liberty was hardly secured; but there were great differences. The nobility formed the court of the prince, supplied him with his principal servants, and thus exercised a real influence on the government and administration of the State.

The citizens of the towns had influence only through their wealth—by right, and often as a fact, they only took part in municipal administration.

The common people of the towns had no right but that of personal liberty, those of the country were in a state of servitude, limited and made endurable by the law.

The Sovereign considered the country as a complex property, whose value might be increased by good, or ruined by bad administration. He endeavoured, by means of war, to gain increased influence in the affairs of Europe, and having at his disposal the sole control of the army and the finances, he could make war whenever he thought proper. Both these elements, however, required good administration ; the army had to be organised, if it was to render good service, and if the finances were to flourish the taxes must not crush the classes from whom they were collected.

The prince considered the interests of the State as his own business and not that of the nation, and in war waged it, not against a foreign people, but against the Government of a foreign country. He did not ask his people to take part in the war, he merely used his right of employing all the resources of the nation to gain his end. In England, though the forms of Government were democratic, it was really governed by aristocratic methods.

After the middle of the eighteenth century the successes of Frederick the Great caused all Europe to copy, at least in appearance, the military institutions of Prussia, which it is consequently desirable specially to study.

Constitution of the Troops in the Eighteenth Century.

The private soldiers were furnished by levies and by national and foreign enlistment. The nobility and wealthy middle class were exempt from the levies, the burden of which fell entirely on the lower classes. Soldiers were tied to service for life, but in order not to take away too much labour from the land, were given leave at the end of some years, on the condition that they continued to serve some few weeks every year. The enlistment of foreigners was

also carried out, with the object of saving labour to the country.

The officers of the army were furnished, with hardly an exception, by the nobility, and above all by the poor nobility. Possessing little but their rank, their interests were intimately united with those of the king, and the innate respect of the lower people for the superior classes was the chief foundation of the discipline of the troops.

The existence of the soldier was miserable: his pay was insufficient, he was badly lodged, badly clothed, and badly fed. With the increased value of provisions, and the efforts of princes to augment their armies without increasing the taxes, the condition of the private soldier became still worse.

In order to prevent the enlisted foreigners from deserting, a severe discipline was established, which extended to the native soldiers. This miserable existence, the necessity for procuring some money, if even by the vilest means, and the degrading punishments inflicted, made the soldier fall lower and lower in the eyes of the people; pity was replaced by contempt, and the army became separated from the people. By this separation, strange to say, discipline was improved. Separation from the people created a spirit of caste, which taught the soldier to find, in the external forms of military life, something to prize and on which to pride himself: by his martial gait, his uniform, his sense of discipline, the soldier found himself not only separated, but distinguished from the civil population, and this feeling, nursed with care, caused him himself to cherish that discipline, which was one of the causes of Frederick's success.

Strength and Composition of Armies in the Eighteenth Century.

Owing to the necessity for saving labour for the land, the armies of the eighteenth century were never very numerous. An army of 60,000 men was considered large.

Cavalry was in large proportion, which increased still

further under Frederick: in the Russian army the squadrons exceeded the battalions in number, to every 3000 infantry there being 1000 cavalry.

The artillery were also very numerous, 3½ to 4 guns per 1000 men. During the Seven Years' War the Prussian infantry deteriorated, the new levies necessitated by the great losses incurred were only partially trained, and largely consisted of foreigners taken chiefly from among deserters and prisoners of war. As his infantry deteriorated, Frederick increased his artillery, a proceeding also due to the fact that his principal enemies, the Austrians, as a rule, awaited attack in positions chosen and prepared with care, and furnished with a numerous artillery.

Nature of Military Operations in the Eighteenth Century.

The political atmosphere of the eighteenth century had great influence on the mode in which armies were subsisted. The people not having been consulted regarding the acts of their Sovereign, armies in the field could not live at the expense of the population. It was necessary either to buy supplies in advance, or to declare them the property of the State before employing them for the use of the armies. On the other hand, the prince, considering his dominions as a vast estate, whose prosperity was to be cultivated in his own interest, could only allow the troops to consume the products of the soil under a regulated control. This was the true cause of the establishment of the system of magazines, which was in full use during the greater part of the eighteenth century.

An army marching on the enemy received bread for nine days. The soldier carried three days' rations; the rest were in the regimental waggons, of which there was one to each company. If the army marched for nine days it consumed these nine rations, which had then to be renewed from the magazines. A large number of carriages were consequently

required to bring bread to the army, and this number increased in proportion to its distance from the magazine. A double column of waggons was formed, the one full, going to the army; the other empty, returning. The extent of these convoys was necessarily limited by the number of carriages and draught animals and the means of feeding the latter *en route*.

In addition, the further the army was from the magazine the greater was the facility with which the enemy could cut in between them, carrying off convoys or necessitating large escorts.

From the above it resulted that the army depended on its magazines, and could not separate more than four or five days' march from them. It being as important to guarantee the security of the magazine itself as of the communications therewith, it was usually placed in a fortified place.

If the army had to move more than five days' march from its first magazine, a new one had to be created. To establish this in a foreign country, and to fill it either by purchase, by requisitions, or by bringing up supplies, time was required, and this caused delay when acting on the offensive, from which the enemy, on his side, could profit.

These difficulties increased if it was necessary to draw, not only bread for the men, but forage for the horses from the magazines. Cavalry were numerous at this time, and the magazines could only feed them when aided by water transport.

It resulted from these facts that the offensive was very limited in the eighteenth century as long as this system of supply lasted. The necessity of renewing the supplies caused periodical delay; a strong place occupied by the enemy could not be left behind lest the garrison should disturb or carry off the convoys; it was necessary to take or at least to invest the places near the line of operations, which caused delay; when seized, these places were converted into magazines—all this giving to fortified places an extraordinary importance.

On the other hand, this system of supply had some advan-

tages. The army carried everything with it; the chief had it in hand, was not obliged to divide in order to feed it, and was consequently always ready to fight.

The army marched, when without the immediate sphere of the enemy's operations, in one or several columns by roads nearly parallel, keeping, as far as possible, the order in which it would arrive on the field of battle.

In the evening the whole army united in the same camp and camped in order of battle whenever possible, the soldiers sleeping under canvas. The army was thus generally united under the eyes of the General, orders arrived easily and without delay, and the General could personally insure their execution. He could easily assemble his Lieutenants and give them his verbal instructions. He was in immediate contact with his troops; he could ascertain at any time the spirit which animated them, and stir their hearts by his eloquence. This eloquence was, however, at that time rare: an abyss separated the General from the soldier, the depth of which was felt by both, and this separation weakened the moral action of the commander.

The General could make an exact reconnaissance of the enemy in person, the order of battle, deployed in two lines, causing broken ground to be avoided. The sight of the enemy's tents enabled the General to tell his strength, where he would place his line, and at what points he would support his wings. Thus he could give his orders with certainty.

This compact and methodical order of battle took away the liberty of movement of the different corps and all power of initiative from the subordinate commanders; but it was singularly favourable for unity of action. In the eighteenth century it might be said that a battle was fought under the command of the Commander-in-Chief. Nevertheless this did not prevent a great General from leaving a wide field to the initiative of his Generals, of which the action of Frederick the Great's cavalry is a striking example.

All the Generals of the eighteenth century, not excepting the greatest, were under the influence of the state of affairs

above described. Even Frederick showed himself greatest when on the defensive and in his own country. On several occasions, and from all sides at once, the armies of his enemies marched against the centre of Prussia, seeking to unite and crush him. The forces of Frederick were never equal to those of even one of these armies. It was necessary to beat each of them separately, while abandoning the country to the others and opposing them by only feeble detachments. To do this he threw himself by a rapid march on the nearest and most menacing of his enemies with the bulk of his forces. His order of battle was the oblique order—the attack of one of his enemy's flanks, by preference that one which was nearest his line of retreat, since he always sought to turn the enemy. If Frederick was victor, the enemy found his communications cut, and the victory was decisive; if he was beaten, his own position became extremely critical, the tactics of the period making a retreat in good order in face of enterprising cavalry extremely difficult.

The battles of Frederick were thus always hazardous enterprises. What saved him in his defeats was his enemy's want of skill and the discipline and cohesion of his own troops, who rallied on any point indicated beforehand, even after the greatest reverses.

If Frederick could not succeed in preventing the junction of two hostile armies, which gave such superiority to his enemies that he could not possibly deliver battle to them, he had still another resource. He established himself in one of those positions, then considered impregnable, which he himself would have without doubt attacked, but which his adversaries respected, and there he waited until they separated. He had a right to suppose that this separation would not take long, for without mentioning the different interests of the Powers allied against him and the disputes of their Generals as to precedence, it almost always happened that one of the two armies, in order to unite with the other, had to abandon its magazines or to move so far from them as to be able to re-victual with great difficulty. The two armies

had consequently to be supported on the magazines of one only, and these not being calculated for this strain, the allied armies had to separate at the end of a few days to avoid starvation.

During autumn and winter the roads, badly kept, were impracticable for carriages. Marches were difficult, and the transport of supplies became impossible. When to this was added the insufficient clothing of the soldier, it will be understood that a winter campaign caused enormous losses. Consequently they were the exception in the eighteenth century. If the war was not finished at the end of autumn by peace or a suspension of arms, the armies remained in presence, taking up their winter quarters in the towns and villages, and covering themselves with an extended line of outposts.

That which characterises the Art of War in the eighteenth century is unity of action. The active force, the army, acted as a complete unit, always concentrated. This it is which is at once the strength and the weakness of the strategy of this period.

The strategy of the eighteenth century disappears from history with the cannonade of Valmy, on September 20, 1792, when the French General, Kellerman, defeated the Duke of Brunswick, commanding the Prussian army, sent to crush the new-born French Republic. At Valmy the concentrated forces of the Prussian army were led against the enemy in the direction most dangerous for him; but no longer knowing how to act with vigour, they succumbed before the moral force of revolutionary enthusiasm.

After this came a short period, which may be called that of methodical war. The forces, in place of being concentrated, were separated, and each fraction was intended to protect the action of the others. This conception of protection, however, entirely lost sight of the idea of action, and every blow aimed at one of the parts shook the entire edifice.

By the side of this system another, due to the French Revolution, was formed at the same time, which, while giving to the fractions of the army an independent life, at the same

time suppressed one portion of the old military art, supply by magazines, to substitute for it supply by requisitions.

The independent life of the fractions of the army led at first to a partial separation, like that under the so-called methodical system; but the living force residing in the French system distinguished it from this system, and ensured its victory over it.

There was, apparently, in the French system, as put in practice by Carnot, the French Republican Minister of War, even less bond and unity of action than in that of so-called methodical war: it seems, at first sight, to be completely without art, and not even to contain its elements. Nevertheless it was victorious, a fact which has given a pretext to the sceptical to deny the possibility of any Art of War being based on principle.

At this period Napoleon appeared, to bring confusion into order by the idea that unity of action could be obtained without diminishing the individual life of each fraction of the army. Separation for great movements, but unity of action; to divide the army for subsistence and to unite it for battle; this was the strategic method of Napoleon, and the cause of his victories. Thanks to this idea, Napoleon was long victorious, until it was understood and adopted by all the European nations, and until the peoples rose against the imperial armies.

While the independent existence of fractions such as armies, army corps, divisions, was being introduced into the forces of his enemies, it disappeared gradually from those of Napoleon, under the pressure of a frenzied effort for universal and absolute dominion. Napoleon struggled for some time, and held his own against all his adversaries, but was at last conquered.

After the final fall of Napoleon a long peace reigned in Europe, broken only from time to time by the interference of the Great Powers constituting the Holy Alliance, for the suppression of revolutionary movements in their own or the minor States, or to maintain the existing order.

The death of the Czar Alexander, in 1825, closed this epoch. His successor, Nicholas, adopted a Russian in place of a European policy. The rising of the Greeks in 1825, cruelly suppressed by the Egyptian troops of Mehemet Ali, resulted, after the destruction of the Turkish Fleet at Navarino, in Greek independence, and subsequently in the invasion of Turkey by Russia in 1828–9.

In 1830 the expulsion of the elder Bourbons from France and the accession of the Orleans dynasty, contrary to the principle of the Divine right of kings, gave the final blow to the Holy Alliance, proclaimed the cessation of its existence, and was the precursor of many changes in European order as arranged in 1815.

The French Revolution of 1848 substituted a republic for the throne, and was the signal for revolutionary risings throughout Europe; but the extreme views and unpractical spirit of their promoters caused their failure in every case, except those, such as Schleswig-Holstein, Italy, and Hungary, where they were supported by the spirit of national independence. In France the Revolution resulted in the establishment of the Second Empire under Louis Napoleon.

Changes in the Armed Forces in the Nineteenth Century.

The long series of wars from 1792 to 1815, with the dazzling successes of the French under Napoleon, and their reverses after the disastrous invasion of Russia, had stripped war of conventionality, restored its pristine power, and displayed its capabilities. During these wars the armies of Europe had been completely transformed; they had gradually ceased to be mere armies of the Government, and had become national forces; it was that which enabled them to attain the degree of force which they had reached. After 1815, while the re-established Governments wished again to consider the armies as their instruments, they were obliged to preserve the new forms which they had assumed. As a fact, no

national force could attain the same standard with an enlisted army, an army of the Government separated from the people, as by arming the popular force. From the wars of the first French Empire, the armies of Europe issued identical in arms and equipment, in tactics, in the systems of supply and administration, and almost even in military education. Consequently, superiority in numbers played a greater part than at other times, and, as a fact, almost entirely decided the later battles.

While the Holy Alliance ruled, the Powers made no great efforts to compete in the size of their armies; they even agreed to maintain a state of armed peace, only interrupted by a few wars waged to establish order, and which were of little importance. The most important of the European Powers had no more troops than the smaller. These latter, in order to maintain themselves at the level of the first, were obliged, by reason of their limited resources, to seek to give to their armies the character of an armed people, so as to be able to enlarge them in case of war by pouring into them the reserves and militia.

Thus we see Prussia remain an armed nation; and if the other Great Powers did not revert, like England, to armies of hired soldiers, they nevertheless approached to the old type of governmental army, by the length of the soldiers' service, by the insufficiency of reserves, and their militia system.

This state of things ceased with the revolution of 1830, which broke up the alliance of dynasties and replaced it by the individual interest of States. One may say that from this date all the armies of Europe tended little by little, slowly but certainly, towards the development of the system of reserves and militia, by diminishing the length of service of the soldier, and by calling under arms every year a larger number of conscripts.

An impulse was thus given to all States to raise their armies to their extreme strength, but this tendency has its limits in the resources of the State, and the greater or less perfection of its military organisation, by reason of its

political and social institutions, and the conditions of existence.

The revolution of 1848 gave birth to the idea that the existence of standing armies was incompatible with true liberty, and that they should be replaced by militia, such as Switzerland possesses. This evil influence of standing armies, although not true of countries in which the army is really the military school of the nation, is certainly true in some, where the laws and customs place the army at the absolute disposal of princes, jealous of their power. The idea was, moreover, supported by the fact that most of the armies of Europe had attained their actual form in the great wars terminating in the triumph of Divine right over the French Revolution, and by the further fact that for a generation since then these armies had only been employed in wars waged to suppress revolt.

This tendency towards armies formed of militia produced a reaction after the suppression of the revolution in 1848–9; a reaction aided by the fact that the attempts then made to substitute militia for standing armies, carried out without military knowledge, without time for preparation, and without sufficient resources, had miserably failed. This reaction, however, which showed itself most violently in Prussia after 1860, is isolated, and does not disturb the fact that the natural course of things leads States to extend and develop the system of reserves, which leads up to a system of militia.

As has been already said, there are limits to the effort to thus obtain a superiority by numbers, the only superiority possible when similarity of means is accepted as inevitable. When the European equilibrium created by the Holy Alliance was destroyed, it was natural that the Powers should endeavour to gain superiority for their armies by changing the mode of fighting and the quality of their troops; they strove to make their own army superior to others by better education, different tactics, and better arms and equipment.

The tendency towards an extension of the system of reserves, above referred to, was completely justified by later wars and the victories achieved by the Prussians.

Prussia, the smallest of the Great Powers of Europe, had for financial reasons remained the most faithful to the system of reserves. The success of France in the Crimea in 1854, and in Italy in 1859, when the French army was far removed from a system of reserves, caused much surprise in Prussia, and led to a violent reaction in that country against that system, commencing from 1859.

The Prussian Government was forced to create a new military system, in which the permanent army should be increased and placed in first line with the youngest of the reserve men ; the landwehr, on the other hand, becoming an auxiliary force and passing to the second line. The age of leaving the service was reduced at the same time from 39 to 32, and the last five years were passed in the landwehr.

This project of military reorganisation had also a political aspect, and caused a conflict between the Prussian Government and the Chamber of Deputies, which was only terminated by the successful war of 1866. While this conflict was going on the Prussian army had been reorganised, but without imitating the bad points of the French system.

The victories of 1870 strengthened the national confidence in the system of reserves, and this system, which had been mocked at by the French as one which produced "an army composed of recruits and of middle-aged men disused to military service," became universally admired, and has been since imitated by almost all the nations in Europe except Great Britain, while still adheres to voluntary enlistment.

The military system adopted by the Great Powers of Europe after the Prussian victories is briefly as follows :

A cadre, composed of a permanent army more or less strong, gives the men their military training.

An extensive system of reserves exists, based on obligatory military service, and arranged for territorially, to facilitate mobilisation.

In case of war, the reserves increase the effective strength of the active army ; and form, in addition, bodies of special troops (troops for supplying losses in the first line, militia or

landwehr, a territorrial army, and garrison troops) whose organisation is prepared beforehand by the cadres of the active army.

This system is capable of modification to suit the various necessities and requirements of the different nations who have adopted it.

The military reorganisations of the Great Powers are still far from their termination: they have not, except in Germany, yet passed into the manners of the peoples; but it is certain, nevertheless, that if a war occurs among the nations of Europe, gigantic armies will be deployed; a general mobilisation will influence profoundly all the conditions of life of the people, and will immensely interfere with their business.

Whether war will become rarer and finally disappear from civilisation remains to be seen. It is evident that two great nations who come into collision will seek to surpass each other in the strength of their armies, and will prepare for this in peace-time to an extent only limited by the expense which they can bear.

M. de Block's books are storehouses of facts as to modern armies, but his deductions as to the abolition of war were quite erroneous.

Training of the Troops in the Nineteenth Century

Before 1815, a continued succession of wars had allowed no time to give to the troops that training and precision the want of which had often been so cruelly felt; the peace of that year furnished opportunity to supply this defect. The armies were exercised with care, tactical units were minutely instructed, and manœuvres were executed in which divisions, army corps, and even entire armies took part, to teach the Generals how to handle masses of troops.

The monotony of the exercises of field manœuvres soon wearied those Generals who repeated them year by year; man loves change, and it is not astonishing that that simplicity

which is the first requisite of every movement in war soon appeared tiresome on the exercise field. New formations, in some cases impracticable, were adopted by certain Generals, and even introduced into the regulations; and when it was objected that such movements were never used in war, they were excused as being useful for instruction, in giving skill and smartness to the troops.

Rumours of war from time to time caused reflection and a temporary reverting to the lost simplicity, but this good path was quickly abandoned when peace resumed her sway.

To break the monotony of military training, from about 1840, in almost all the armies of Europe, bodily exercises were introduced, such as gymnastics, swimming, and bayonet exercise; the former of which are useful and advantageous to every man, and not only to the soldier. Those persons who have striven so hard to lengthen the service of the soldier, in order to augment armies during peace, have used this description of instruction as a pretext for keeping him longer with the colours. It would be better to introduce gymnastics and swimming into the education of all the youth of the country, so as to improve the race and the individual, and at the same time to lessen the time necessary for the instruction of the soldier. We are now agitating to make physical and military training obligatory in all British schools.

After 1815, the teaching of skirmishing became almost everywhere an object of special care, the important part played by skirmishers in the recent wars being recognised. The new spirit pervading the people came to the aid of this new school; the lower orders, from which armies are mostly recruited, had obtained almost everywhere individual liberty, or at least more of it than before the Revolution. The immediate consequence of this was greater independence of thought, and a better education; the soldier took interest in what had before been merely a burden to him, and the more so in proportion to the amount of latitude left to individuals; the inferior officers, also, having a more extended sphere of action, became more attached to their profession. All this

was certainly a benefit, but danger lay in exaggerating this system.

In order to be able to deploy more skirmishers than in the normal formation of battalions, company columns or analogous formations were introduced. By thus breaking up battalions facility was obtained to make corps more independent, and to increase in duration the fighting of a single battalion. A battalion thus formed manœuvred like a brigade, its fighting unit being the company. The inferior officers accepted this formation enthusiastically, and adopted it even when not at all suitable; these inferior officers, when they became Generals, exercised, from habit, divisions of the army as if they were simple battalions. The use of company columns was thus exaggerated, and became an evil.

The general employment of skirmishers, when not limited by judgment, gave also to the accidents of the ground a value which they really possessed for the skirmishers, but which they lost for a division or an army corps.

The inevitable result of this new tendency was the scattering of troops, no longer leaving large fractions in the hand of the General; the choice of positions, favourable only for keeping the army together; and finally, the fear of going out of these positions lest the commander should lose control over his army, which occupied too great a space when in movement on account of the breaking up of it into small bodies. This evil manifested itself notably in the wars from 1848 to 1850.

Another description of danger was produced by the mechanical mode adopted in teaching skirmishers, which took away from them their individual liberty of action; they were required, for instance, to keep in alignment, which prevented individuals making proper use of the ground.

The individual liberty of a people is greater in proportion as their education is advanced. To the army which comes from such a people there is a danger that the independence of individuals may lessen the power of the commander; but the circumstances which produce the danger ultimately cause

the necessary reaction and bring things back within just limits.

The contrary defects are most to be feared, such as exaggerated mechanism in the handling of masses, and the want of practice in isolated fighting, defects still to be noted in the Russian army. While with other nations the battalion is too often employed as a brigade, and too great a rôle is left to the individual in the whole in which he is a unit; we see in the Russian armies, composed, until the recent emancipation, of serfs, the individual disappear completely in the mass, and entire brigades or divisions of the army treated as simple battalions.

The improved education given to the lower ranks of the army has been necessarily extended to the officers. Those who wish to command others should be superior to them in bravery, intelligence, and in knowledge. During peace, bravery can seldom be estimated, and merit must be reckoned by knowledge and intelligence. The military instruction necessary for their rank is indispensable for all officers, but a good general education will also much assist in establishing a good feeling between him who commands and him who obeys. Thanks to that, an order which passes through the successive ranks of the military hierarchy will not lose its force by being badly understood and badly transmitted.

After 1815 the facilities for military instruction greatly increased. Under the influence of the immense political interests represented by the struggle for existence, a struggle in which the French Revolution compelled every nation to take part, war had taken the grandest proportions, and displayed to what degree of power it could arrive : a fact which Europe had almost forgotten during the small dynastic wars of the eighteenth century.

The true spirit of war had been newly brought to light, and experience had proved and developed many truths with the clearness and precision of mathematical axioms. It sufficed to record the experience acquired to obtain a complete system of military art.

The above was the chief cause of the progress made by military literature after 1815, but other causes co-operated in the same direction. One of these was the advance of the natural sciences, their new development, and their influence on general education. The scientific method of research was applied to the science of war; military science observed facts, analysed them, sought to resolve them into their true elements, and by these means principles and truths were discovered which never can be forgotten after having been thus acquired.

It results from the preceding observations that the military instruction of the officers of our day is more extended and more profound, and although great Generals may be as rare to-day as formerly, this progress of military education does not the less exercise a happy influence on the leading of armies; and a great General, if he appears, will find in his officers more support and better appreciation of his designs than he would have formerly. He would have less trouble to form a good staff and to find good lieutenants.

The improvement in the general intelligence of officers under the rank of Colonel was a subject of general comment in South Africa.

Improvement in Armament, &c., in the Nineteenth Century.

The revolution which took place from 1792 to 1815, in armies, and in the mode of making war, was chiefly in the interior structure of the army, in the choice of its elements, in formations and tactics, without any change being made in armament, which is the basis of tactics.

While the Holy Alliance (Russia, Austria, Prussia and France) maintained the peace of Europe this state of things continued, but when this equilibrium was destroyed each army sought to gain advantage by improvements in its armament, and when one army adopted an improvement all the rest were bound to follow suit.

These efforts were favoured by the progress of the natural sciences, by the increased intellectual intercourse between peoples, by the instruction of the soldier, and the long peace enjoyed by Europe.

Artillery was the first arm in which improvements were made; the greater mobility of field artillery, the Congreve fuse, and Shrapnel shell, all introduced by the English about 1807, were soon adopted by the other Powers. Greater precision of fire was sought to be obtained by better training of the men, by powder more regular in its action, by increased gun practice, and by means of measuring the ranges; attempts being constantly made to apply the principle of the rifle to cannon.

It was not until 1828 that serious attempts appear to have been made to improve the arm of the infantry. In 1830 the percussion cap replaced the flint, a change which gave greater certainty and therefore greater importance to infantry fire, and affected tactics by making the use of skirmishers more general. The attempts to increase range and accuracy by rifling were at first unsuccessful, owing to the weapons manufactured being too delicate and too long in loading for the use of infantry of the line, to whom a rapid fire at short range is often more important than long range and accuracy of aim. A rifled arm easy to load was desired and was found; some loading by the muzzle, as the Minié carbine, others by the breech, as the needle-gun, a weapon which was employed as early as 1849 by the Prussians in Baden, but without attracting much attention.

Important changes were made in equipment as well as in armament, the clothing and equipment of the soldier being simplified and improved with a view to the mobility of the troops and the health of the soldier; but much still remains to be desired in this respect. There is a tendency, when local circumstances have caused an article of kit to be adopted, to adopt it for general use under all circumstances; this tendency creates new requirements for the army, overloads the soldier, and increases the transport of the army. The wars from

1815 to 1852 were for the most part waged to suppress revolt. On the one part it was much desired to make the troops independent of the population, and to spread them as little as possible for subsistence; on the other it was desired to gain over the inhabitants by avoiding requisitioning. The resulting increase of baggage was not felt because the resistance offered was small, and the war was in a restricted theatre.

It is difficult to decide whether it is the mode of making war and its political object which increases its wants, or if it is, on the contrary, the increase of its wants which decides the method in which war is made. In any case, it is evident that this second effect must exist, and that an army which wishes to make war by grand decisive movements should reduce its wants to a minimum and diminish the means of transport as much as the theatre of war permits.

To make war successfully it is necessary, where great movements are to be undertaken, to constantly study to lessen the transport. This is arrived at by good administration, the education of the troops and their chiefs, and by drawing from the occupied country itself the greatest part of what is needful. The introduction of railways has not lessened the necessity for keeping the impedimenta of an army at a minimum.

As early as the time of the Crimean War, in 1854, it had been decided that all infantry should be armed with the rifle, but it was only in the Italian war of 1859 that the belligerents used the rifle exclusively.

The rifles used were generally muzzle-loaders, the Prussians had the breech-loading needle-gun, which, however, as already mentioned, made little impression when first used by them in 1848 and 1849.

During the American Civil War the national ingenuity was brought to bear in the improvement of firearms, a great number of new rifles were brought out, most of them breech-loaders, some repeating-rifles. The European States followed

suit; the Prussians, however, retained their needle-gun, but worked hard after 1860 on improving the musketry training of the men, on the ground that the most perfect arm will do little in the hands of uninstructed men.

This improved training had its effect in the wars of 1864 with Denmark, and of 1866 with Austria.

Since this all the European Powers have recognised the necessity of arming infantry with rifles which shall be breech-loading, of small calibre, and with a uniform cartridge. Switzerland and Italy have adopted the repeating rifle, other nations having done so only for special corps.

In 1870 the Prussians had still their needle-gun, a little improved, against the much superior French chassepôt, the difference of arms not greatly influencing the result. After the war both combatants adopted new rifles, the Germans the Mauser, sighted to 1800 metres; the French, the Gras, sighted to 1600 metres.

In 1864, in 1866, and in 1870 the Prussians had retained the use of their accustomed company columns, of which the first advanced to fight, deployed in thick lines of skirmishers. All the other Powers adopted this or a similar system either before or after 1870.

Breech-loading rifles, if well served, produce in a short time the most serious and demoralising effect on the enemy; it is necessary, to avoid losses, that every man, every group, in the line of skirmishers take advantage of cover and advance with skill. This result can only be obtained by an intelligent and un-mechanical training of the troops.

The breech-loader enables a man to fire and load in all positions, and consequently to profit by small variations of the ground; which may be improved or created artificially, by means of earthworks. In 1860 the Maoris of New Zealand had employed these successfully against the English; in the American Civil War shelter trenches were largely employed, and even constructed during the fighting; these trenches were gradually strengthened, and behind them the combatants remained in presence of each other for days and even weeks,

causing the war to lag slowly on. The example of the Americans induced the French to try shelter trenches, but their use of them in 1870 was not ultimately successful, as they diminished the offensive spirit of the French army. The Austrians also made use of hasty earthworks in 1866, notably at Königratz, but not with success.

In 1877 the Turks used field entrenchment with excellent tactical effect, but the pure defensive they adopted strategically resulted in their complete defeat.

Notwithstanding the above experiences, it is acknowledged that the construction of earthworks on the field of battle is essential, and the armies of most civilised States now carry tools for the purpose.

The rifled cannon has, with its projectiles, been of late immensely improved, and latterly the tendency has been somewhat to sacrifice the mobility of field artillery to obtain a gun of greater power and range, the latter being essential to cope with the long range rifle of the enemy's infantry, who it must shatter by its preparatory fire.

Artillery has even greater need of the protection of earthworks than infantry, remaining, as a rule, longer in the same position; modern arms make it also essential that it shall expose as small a number of its gunners as possible, and shelter its horses, limbers, and waggons.*

We have not space to dwell on the lessons as to gunnery of the South African War, and the use of Long Toms, 4·7 guns and pom-poms.

Employment of Cavalry in the Nineteenth Century.

Cavalry had had but little to do during the Crimean War, though the British made some famous charges. In the Italian campaign of 1859 and 1860 its part had not been much greater,

* Since Colonel Tovey wrote there has almost been as great a revolution in firearms as there was between 1815 and 1870. The probable effects of magazine fire, smokeless powder, increased range and flat trajectory were all the subject of lectures before 1899.—EDITOR.

for, at the battle of Solferino, two entire divisions of French cavalry served only to fill a blank in the order of battle.

In their Civil War, the Americans, both North and South, equipped with great completeness strong bodies of cavalry, composed of bold horsemen, accustomed to the saddle from their youth. The *personnel* and equipment of these troops were perfect, horses were abundant and easy to replace, but only the simplest movements and tactical formations were taught. Besides the sabre, the horsemen were provided with firearms, with the use of which they were also familiar.

Furnished with these firearms—pistols, revolvers, and carbines, often repeating carbines—this cavalry became independent. It formed capital dragoons, who knew how to fight on foot, and could cover long distances in a short time, thanks to the light equipment of man and horse, thanks also to the ease with which any horse breaking down could be replaced *en route*.

This body of cavalry, under young and enterprising chiefs, (Stuart, Mosby, Morgan, Forrest, and many others), with the independent character of the American population, had little taste for tying itself to other arms less mobile than themselves. They freed themselves from the rest of the army, the infantry and heavy artillery, with their trains and baggage, and undertook distant raids into the enemy's territory, spreading terror and false intelligence, cutting the communications, and living easily on the country.

These raids excited the attention of Europe, especially in Russia and in Austria. In the latter country light cavalry were trained for the purpose, and were intended to form, during war, independent divisions operating like the American cavalry.

The war of 1866 came, and the Austrian cavalry had no opportunity of carrying out raids in a war without initiative, filled with defeat and disaster.

If the Austrian cavalry did not play a brilliant part in 1866, it was the same with the Prussian cavalry of the army of Bohemia; although numerous, the latter carried out the

work of exploration badly, and although there were brilliant feats of arms on both sides, the action of the cavalry as a whole was disappointing. Each side was quite ignorant of the positions of the other side for a few days before the battle of Sadowa.

With the Prussian army of the Maine the rôle of the cavalry as regards exploration was better filled, owing to the presence of a more enterprising commander.

In 1870 the German cavalry proved that they had studied the past and had adapted themselves to the requirements of modern war. Their independent divisions of cavalry were formed of from four to nine regiments, in two or three brigades; each army possessed two or three cavalry divisions, and each infantry division had, besides, a regiment of cavalry for its immediate use. The independent cavalry divisions had to explore the country as far as possible in advance of the main body of the army, find out the enemy, reconnoitre his position and movements, and at the same time veil their own army from similar attempts by the enemy.

At first the German cavalry acted only with great caution; it was only after seeing that the French cavalry did not act in front of their army that the German cavalry became bold and showed an activity which may serve as a model for future wars. It certainly accomplished great things, but it must be remembered that such results cannot be expected in any future war in which the enemy's cavalry are equally ready to act in a similar manner.

The Germans, having studied their own experience in 1870, have now decided that their independent cavalry divisions shall consist of three brigades, each of two regiments, and of two or three horse artillery batteries, that is to say, of about 3600 horsemen and 12 to 18 guns.

As all the European Powers have adoped nearly the same system for the use of their cavalry, the next war will show how it works under normal conditions.

In 1870 the French made desperate charges at Woerth and Sedan, but it was only in the field of Vionville that real

cavalry combats, on a large scale, occurred on the field of battle ; and this can hardly be considered, in the present day, as the true use for the arm.

In 1877 the Russians, under Gourko, crossed the Balkans with a force mainly of cavalry, and subsequently their cavalry divisions succeeded in completing the circle of investment round Plevna, frequently fought on foot and performed valuable service in exploration, but on the whole the Russian cavalry, regular or irregular, did nothing very remarkable in this war.

The general tendency in Europe at the present day is to render cavalry capable of acting, for a given time, in an independent manner. For this purpose they are provided with an arm resembling that of the infantry, either a rifle or a carbine, often a repeating one. Cavalry pioneers have also been created, each regiment having a detachment of men furnished with tools. With a certain number of batteries attached, a Cavalry Division so organised may be considered as a little independent Army Corps, in which all arms are represented. There is no reason for believing that even the shock tactics of cavalry will not recur, and certainly mounted troops by whatever name called are invaluable at present.

A discussion as to the relative merits of sabre, lance, carbine and revolver as armament for cavalry is now being conducted with energy.

The relative value of Cavalry proper and of Mounted Infantry is also at present a matter of warm controversy.

Modifications of the Theatre of War in the Nineteenth Century.

Having spoken of the changes which have taken place in the armament and equipment of armies, reference must now be made to those changes in the theatres of war which must have a direct influence on military operations.

Mountains and rivers, the physical features of a country, are themselves susceptible of little change, but their influence on military operations has been largely modified by the increased number of bridges in the case of rivers, and by improvements of roads and increased cultivation in the case of mountains. Bridges, however, are easy to destroy, and mountain passes can easily be rendered impracticable, so that these modifications will have only a secondary influence on warlike operations. The use of iron and improved mechanical appliances have enabled bridges and roads to be made in the most unlikely places—*e.g.*, over the Goktiek Gorge.

Modifications more important in their effect have taken place in the system of defence by fortresses, in the means of communication, and in the cultivation of the soil.

Fortresses.—The Napoleonic wars had thrown fortresses into discredit. The rapid fall of the Prussian fortresses in 1806 and 1807, after the destruction of the Prussian army, and the apparent uselessness of the triple belt of fortresses on the northern French frontier in 1814 and 1815, had given rise to the exaggerated idea that fortresses were no longer of value, and had no influence on modern war. Before long however, it was seen that it was not that fortification was of no use, but that its mode of application was obsolete; that what was required was not a great number of small places aligned along a frontier, but a small number of large fortresses, preferably large towns with great resources, situated at important strategic points.

It was argued that the invader who would wish to live at the expense of the country would commence by attacking these great towns, of importance in themselves and as storing the wealth of the country. Further, he would have to attack them by reason of the strong garrisons which they could receive, and which would be a permanent danger for his communications, if he left them in his rear without masking them with a strong force.

The objection that fortressess weaken the defence by withdrawing soldiers from the field, is much lessened by the fact

that the number of fortresses would be small; while national forces are much stronger owing to the system of reserves and of militia, which furnishes many men, who, although unsuitable for the active army, are well fitted to garrison fortresses.

These arguments gained the day, and all the States of Europe proceeded to fortify their most important towns, including the capitals, although special objections were raised to fortifying the latter as restricting their development, and on the ground that such large cities would require too strong a garrison, that a fortified capital would acquire too great an importance, and exercise too great an influence on the operations of the active army, and also that a long siege of a capital would demoralise the populace.

While the system of defence by fortresses had thus become largely modified, the mode of fortification also underwent great changes to meet the necessities of the new arms and new tactics; and the continuous enceinte of the old fortresses was surrounded by a chain of forts, independent of the enceinte and of each other. This system was further modified; compare the present defences of Paris with those of 1870.

This double line corresponded to the system of reserves of the new tactics. The enceinte acted as a reserve to the chain of detached forts, each of which had also a keep, for a similar purpose; while in front of the forts temporary works were designed, corresponding in their functions to the preparatory stage of a battle in the field. At the same time the amount of casemated shelter in fortresses was greatly increased, so as to protect not only the stores and magazines, but also the garrisons.

For some time the new system met with objection, especially from the French engineers, who adhered to the bastioned enceinte as against the system of forts flanked by caponiers, or German polygonal system, and in consequence many towns were lost in 1870–1. The progress of artillery, however, soon made adherence to the former impossible, and the system of detached forts surrounding an enceinte, placed

at distances suitable to the ranges of modern artillery, was universally adopted between 1870 and 1890.

Railways.—Of all modern modifications of the theatre of war, none has had so great an influence on strategy as the construction of railways, an influence which began to be foreseen from their introduction about 1840.

The characteristics of railways, as distinguished from other means of communication, are as follows :

They are essentially artificial in every sense, they can be very easily destroyed, and a local and comparatively insignificant damage makes them completely unserviceable.

They require special carriages, and the troops carried in them are not, during their transport, ready to fight, and cannot even be easily placed in fighting order at any given point of the railroad.

Railways are small in number in comparison to ordinary roads,* and troops cannot pass at will from a railway to an ordinary road, and *vice versâ*.

Great masses of troops cannot be embarked by railway at any part of the line, but only at prepared stations and generally only at large stations. The number of troops which can embark at once or successively at these points is limited, and depends on the number of carriages which can be concentrated at this spot, and the number of lines available.

Large bodies of troops must therefore be embarked by fractions, which arrive at their destination one after the other, and sometimes only after the carriages carrying the first troops have returned empty for a second load.

When marching on an ordinary road, troops can advance in several columns, because usually several roads can be found, more or less parallel, and at a short distance apart; when moving by rail, however, the advance must usually be made in a single column.

Ordinary roads permit the simultaneous march of all arms. By railway the transport of horses and carriages offers much

* In some parts of the world railways are now made before ordinary roads —*e.g.*, America and Asia.

greater difficulty than that of men or stores. Railways are consequently better fitted to transport infantry, ammunition, supplies, sick, and prisoners, than to carry artillery or cavalry; and are consequently unfavourable to the retention of the different arms in their normal proportions.

The loading of the railway carriages always requires considerable time, a consideration which is more important in proportion to the number of the troops, or the quantity of material to be carried, and to the shortness of the distance.

In spite of all these considerations, troops travel far more quickly by rail than they do on foot or on horseback. A speed of twenty miles an hour may be calculated on, which, with ten hours a days, will give a journey of 200 miles. This speed may be increased for a weak detachment, but diminishes considerably with large bodies of troops, as will be shown further on.

Let us suppose, for example, that the rolling stock of a railway 200 miles in length suffices for the embarkation, at the same time, or at close intervals, of the infantry of a division of 10,000 men at the same station. This infantry would arrive at the end of the line on the evening of the same day. It would take consequently fifteen days to move the infantry of an army of 150,000 men. But in fifteen days these 150,000 men, marching in several columns on different roads, might traverse the same distance on foot. Consequently it is certain that although 10,000 men would have gained immensely by travelling by railway, 150,000 would have gained very little in this particular case.

The railways spare the troops fatigue, but it may be that when they have to use their legs afterwards there will be more falling out and lagging behind in consequence.

As a general rule, each of two armies can make use of the railways in its rear; that on the defensive, in its own country or in friendly territory, can do so in any case; the army on the offensive under certain conditions only, as far as relates to the railways it comes across in the country it invades. If these railways have been destroyed and rendered impracticable for

the time by the defender as he retires, the invader has the means of repairing them in a short time, except at certain points where tunnels, viaducts, bridges, or other important structures exist, but these the defender will always hesitate to destroy in his own country. Even when railways have in such cases been repaired, they are still exposed to be destroyed again by the inhabitants or by bodies of partisans. The strictest watch is often insufficient to prevent this destruction, so that interruptions must be looked for, but allowing for this inconvenience, both parties can use the railways in their rear. (See Raids on, and Destruction of, Railways in America, France, South Africa, and lately in Turkey.)

The invader can use railways, before the commencement of the war, to transport his troops from the interior of the country to the frontier; it is necessary, however, not to use the railways alone, but to combine marching with transport by rail, the railways being used more especially for the infantry and stores. This use of railways will be of special benefit to States of great extent whose railway system is complete.

In the second place, the invader can use the railways to concentrate the troops assembled on the frontier before the commencement of operations on the selected line of advance. As an instance, if there are three parallel lines of railway, ninety miles from each other, and ending in three points *a*, *b*, *c*, on the frontier, on each of which the aggressor has directed 50,000 men from the interior of the country—if he decides that his main line of operations shall proceed from the central point, *b*—in two days he can bring 40,000 men from each of the points *a* and *c* to this point, an operation which would take six or seven days in the absence of railways. (Nine lines were used by the Germans in 1870.)

In the third place, after operations have commenced, the invader can use the railways as lines of communication as soon as he is completely master of them. For this purpose they have undeniable advantages over any other road, on account of the rapid communication with the base of opera-

tions furnished by them. In such a case almost all the difficulties met with in transporting large bodies of troops of all arms vanish; the only inconvenience is the necessity of guarding the railways, a necessity which may draw many troops from the main army.*

The railways of a country can seldom be used by the invader as a line of retreat after a reverse, but they are nevertheless very useful to him, for they allow him to free himself rapidly of useless baggage, which he can send far in rear of his army. In the same manner he can send detachments some days in advance, with orders to await the arrival of the main body at certain points decided on, to prepare positions and to establish magazines there, if that has not been done before.

The preceding considerations, and the fact that the railways follow, as a rule, the same direction as the great roads which were formerly the routes of commerce, will doubtless cause railways to be, in future, the great roads of armies.

In what has been said above, the resistance offered by the defender has not been considered. The action of the inhabitants and of corps of partisans has been mentioned; that of fortresses on the lines of railway may now be dealt with.

When an invader, operating by a line of railway, meets a fortress belonging to the enemy, he is forced to lay siege to it before continuing his operations, or to give up the railway as his line of communication.

If the great towns have been fortified, it is probable that they command not one line of railway only, but the junction of several lines, and that they thus deprive the invader of the use of cross lines of great value to him.

Consequently it is principally the fortified towns which will interfere with the desire of the invader to support his operations on the railroad, and this fact gives these fortresses great value in a defensive war.

* 145,700 men, 5900 horses and 80 guns were employed on the rearward German railway communications, 1870–71.

In wars of defence, as well as of invasion, railways are useful to carry the troops to the frontier, and to concentrate them on the decisive point, an advantage very important to the defender, who is obliged to watch and guard several points at once. They also serve him as lines of communication and as lines of retreat. (See Chanzy's retreat after the battle of the Huisne.)

One advantage to the defender is that he can always count on the railways in his rear as at his disposal; in retiring, he should keep his forces concentrated near his magazines, and the railways will assist him in doing this, especially at points where several lines from the interior of the country unite and form a junction. It is at such points that the defender will prefer to take his stand against the invader, and at the same time it is at such points that great fortresses with entrenched camps, or groups of fortresses, will be found.

As soon as the defender passes from retreat to offensive action towards the invader, he loses nearly all the advantages given him by the railways. He must dog the heels of the enemy without ceasing, in a state of constant readiness for fighting. He will probably have himself destroyed the railways when he retires at first; if not, the enemy, on finding himself pursued, will not fail to do so. The defender consequently must reconstruct his own railways before being able to use them. On the other hand, if the defender has succeeded in holding the fortresses on the railway junctions in rear of the invader, the latter cannot use the railway as his line of retreat.

The general result of the above considerations is as follows: The use of railways for both the offensive and defensive has great advantages, which cannot, however, be exaggerated without great danger. The use of railways as strategic lines of operations is subject to more conditions than any other routes, so much so that it should be considered in each case whether it will not be better to renounce their use entirely, or if it will not be necessary from the first to set apart a portion of the army to ensure the power of using them.

Since railways much facilitate the bringing up of supplies, above all at great distances from the primary base of operations, they render possible a greater concentration of troops than with the system of requisitions, without interfering with the operations of the invading army, nor retarding its movements, as did the system of magazines of the eighteenth century. The importance thus possessed by railways as lines of supply will often cause them to be used as lines of operations, although other lines may otherwise be preferable to them.

Whatever may be the value of railways, it is clear that the facility with which they may be destroyed makes it necessary not to neglect the organisation of the wheeled transport of an army. Their use may also be rendered impossible by the existence of fortresses, or the troops may be forced to operate at a distance from a railway. Both at the Lisaine and the Huisne the French were tied to railways; so were the British in South Africa.

Sir Edward Hamley considers the military value of railways at some length, and works out the Waterloo campaign of 1815, as it might have been had railways existed. He writes: "It would appear from the foregoing that an invader, supposing other circumstances to be favourable, should direct his attack upon a part of the theatre of war where railways exercise small influence, since their effect is, on the whole, in favour of the defender."

In latter days the extent of railway communication in Europe has increased enormously, and its importance for military movements has increased in proportion.

In 1853 France had hardly 4000 kilomètres of railways; in 1876 it had 23,000, in spite of the loss of Alsace and Lorraine.

In 1860 Europe had 51,496 kilomètres; in 1869, 94,901; in 1876, 148,289. Thus from 1860 to 1875, in sixteen years, the length of railways had tripled. Consider the strategic effect of the Canadian-Pacific and Trans-Siberian Railways.

The great extent of railways constructed, and the certainty

of their being used in case of war, made it necessary to provide beforehand the system under which they would be worked. Studies on the best mode of transporting troops of all arms, on the best length of trains, their capacity and the number which can be sent daily from a given station, had been made from the time of the first introduction of railways.

The system of lines being now comparatively complete, made it necessary that further calculations should be made as to their employment in war. How to carry the army to the frontier by rail as rapidly as possible, without disorder, without interfering with the administration, or interrupting the service of supplies? How to utilise, later on, as lines of communication, not only one's own railways, but those of the enemy within control? How to organise the service on the enemy's lines when the employés and the rolling stock have disappeared? If the enemy has cut his railways, how to repair them for one's own use? How to get round, by an improvised line, points of a railway intercepted by a fortress or other obstacle? Such are the questions which have to be solved, with many others of the same description.

The Americans, in their Civil War, 1861–5, had shown the way in utilising railways for purposes of war; the Germans were the first in Europe to follow their example, they used them in 1866 with success; and in 1870, by means of a system carefully studied and thought out beforehand, produced results hitherto unknown.

The French railways in 1870 effected great things, even more so than the German lines; but the defects of the military organisation spoiled the value of their services.

The experience acquired in recent wars, especially in 1870–71, enables us now to lay down the principles on which European armies will work railways in future.

It has been found possible in view of a projected concentration on a given frontier, to prepare beforehand, even to minute particulars, the plans for the transport of entire armies, in such manner that nothing requires to be done but

to enter the date when the movement is to commence, this being usually the first day of the mobilisation. For greater convenience it is necessary to divide the system of railways in a country into several sections, each of which serves to transport a certain portion of the army. On each of these lines a commission, composed of officers and employés of the line, are charged with the details of the service. In order to keep the arrangements constantly in accord with the latest alterations in the railway system, these commissions are permanent and are constituted in time of peace.

It is thus that the army of a country arranges for its rapid concentration on its frontier by its railways.

If the war is to be offensive, it is necessary to provide for working the enemy's lines. For this purpose a full knowledge of his railway system must be obtained beforehand; this is done by a section of the general staff. Special Railway Corps are also created, who furnish the necessary *personnel* and *matériel* to work the enemy's lines when they are seized, to repair them where damaged, or to destroy them where so required. Consider the value of the British railway in the Nile Valley.

Telegraphs.—At the same time that the network of European railways was constructed, the electric telegraph came into general use. At first following the lines of railways, the wires soon covered countries where no railway existed, and even crossed the ocean.

By means of the telegraph, distance disappears for the transmission of information. If it is a question of concentrating troops, the order is sent by telegraph and transmitted without loss of time. Two theatres of war are kept in connection as easily as two adjoining villages, and the same is true of a theatre of war at the greatest distance from the mother country.

When the telegraph system spread, it was naturally used for military purposes. At first this brought some inconvenience, as when Napoleon III. attempted to command the French army in the Crimea from Paris, and General Pelissier,

in command of it, found it necessary to interrupt the telegraph communication with the Tuileries.

In 1859 the telegraph rendered good service, Napoleon III. being then among his troops; but it was not until after the war of 1866 that exact ideas prevailed as to the application of telegraphs, and especially of field telegraphs, to war purposes.

The telegraph puts the nation in close communication with its distant army, gives it prompt intelligence, reassures and consoles the country; it allows the army to rapidly make known its wants as they arise, and these can be satisfied by means of the railways.

The following are the chief points as regards the more immediate influence of telegraphs on strategy:

1. They enable a General to combine in one view intelligence of what is simultaneously taking place along his front, and thus to arrive at more correct conclusions.
2. They enable orders for the simultaneous action of distant portions of an army to be given.
3. They increase the advantages of concentration given by railways.

In operations against an enemy's rear, the telegraph diminishes the risk and increases the chances of success.

Instance.—General Sherman, 1864, in Georgia, flanking operations. The Russians before Kars in 1878.

In the manœuvres in Berkshire in 1903 the Marconi wireless system was used, and the Royal Engineers did very efficient telegraph work.

Sir Edward Hamley sums up: "On the whole, it appears that telegraphs will diminish, sometimes in a considerable degree, the disadvantage under which a divided force operates against a concentrated force, and that they will enable a General to divide his army, whether for attack or defence, with more confidence than hitherto."

The telegraph cannot be depended on for news from the enemy's rear.

The Field Telegraph Corps, with their own material, prolong the permanent lines, in order to put them in communication with the headquarters of the army and of army corps; it should be ready to make good interrupted lines, to replace apparatus carried off by the enemy, as well as hostile operators who have left their stations.

Aerial telegraphs being easily cut or damaged, the use of underground lines is necessary, especially to connect fortresses, as surely as may be, with other points of the country. Germany has constructed these lines.

Recent attempts have been made to carry the telegraph to the advanced posts by means of an apparatus and conducting line carried on men's backs; the telephone will, however, be probably preferred for this purpose, if the idea is found practicable.

Balloons.—Among other means of communication balloons may be mentioned. These are of use, both when captive, for reconnoitring, and when free, for the communication out of besieged places. Gambetta escaped from Paris in a balloon.

Pigeons.—Carrier pigeons are also now recognised as a standard means of communication with beleaguered cities, and most Continental fortresses of importance are now supplied with them.

Effect of Cultivation.—The social upheaval known as the French Revolution brought about a series of internal national struggles and gigantic wars which convulsed Europe almost ceaselessly from 1792 to 1815; at the close of this period peace resumed her sway, and the prolonged blessing of peace, conjoined with the improved status of the lower classes of society, produced a great rise in material prosperity.

One result of this was the greatly improved cultivation of the soil, coupled with the subdivision of the land into small parcels, over great part of the Continent of Europe; this subdivision being the consequence of the almost total abolition of serfdom, as well as the constant growth of the population. The general result of this has been the clearance

of large areas of copse and forest; but this increased openness has been accompanied by the construction of numerous buildings and gardens, and the making of drains and hedges.

These changes influence the movement of troops by limiting them more and more to the roads, which, however, have become far better and more numerous, the spaces between them becoming every day less practicable for troops by reason of buildings and enclosures.

These modifications in the surface of the ground have, in war, the following consequences: They diminish the use of cavalry in large masses; favour the firing of troops in position, especially of infantry, but also equally favour partial surprises by him who knows the favourable moment, and how to profit by their advantages. This opens a vast field, not only for the infantry, but also for cavalry in the form of small detachments. The artillery are more limited to the roads during preparatory movements. Engineer troops have acquired great importance for clearing away the numerous minor obstacles, and for preparing positions. It is now more indispensable than ever to attach sappers and other artificers to every tactical unit.

The existence of this large amount of cover on ground favourable for preparatory fighting limits the action of the long-range arms of infantry. But in addition to the close country spoken of, and which is to-day so common that it is found on all the battlefields of Europe, there still exist vast opens plains on which armies may be concentrated to deliver decisive battle. Great masses of cavalry may still find a great career open to them there, and artillery and infantry an extended field of fire for their long-range weapons. South Africa was an admirable manœuvring ground, as, on a smaller scale, is Wiltshire.

The progress of industry and of material wealth in civilised countries now allows armies to procure directly, on the theatre of war, many articles, such as clothing and equipment, which formerly could only be obtained from the base of operations.

This results in giving armies greater independence of their base and the possibility of extending the system of requisition to other articles than those required for the mere subsistence of the soldier.

See Blume's "Strategie" for excellent remarks on this branch of the subject, which is also complicated by the reckless destruction of trees in many countries. There is no more interesting book than that by Marsh, the celebrated American writer, on "The Earth as Modified by Human Action." The preservation of the woods on the former eastern frontier of France, as a kind of natural abattis, was recognised by the Government of that country as an important measure of military defence. The following remarks apply to parts of the United Kingdom:

"It is to be hoped that the replanting of the mountain slopes and of bleak and unfertile plains will diminish the frequency and violence of river inundations; prevent the formation of new torrents and check the violence of those already existing; mitigate the extremes of atmospheric temperature, humidity, and precipitation; restore dried-up springs, rivulets, and sources of irrigation; shelter the fields from chilling and piercing winds; arrest the spread of miasmatic effluvia; and, finally, furnish a self-renewing and inexhaustible supply of a material indispensable to so many purposes of domestic comfort and to the successful exercise of every art of peace, every destructive energy of war." The people of Scotland, Ireland, and parts of England itself are beginning to pay dearly for the neglect of the study of forestry by their rulers. The Governments of India and Germany have had more foresight.

CHAPTER IV

STRATEGY

Definition.

STRATEGY has been defined briefly in the second chapter as that portion of the art of war which deals with the great movements which bring armies into the neighbourhood of the enemy. The art, in fact, of properly directing masses of troops upon the theatre of war, either for defence or for invasion.

The latest official text-book ("Combined Training," 1902), defines strategy as the methods by which a commander seeks to bring his enemy to battle, while tactics are the methods by which he seeks to defeat his enemy in battle.

It has also been described as "the art of making war upon the map," and as the "Science of Generals," in opposition to tactics, with which officers of all grades are concerned.

"The theatre of war," says Sir Edward Hamley, "is the province of strategy; the field of battle the province of tactics."

The object of strategy is so to direct the movements of an army that when decisive collisions occur it shall encounter the enemy with increased relative advantage. We may adopt the view of Bulow that when the first shot is fired the duties of a strategist are suspended until the close of the fight, when they are resumed.

The object of a strategist in drawing up his plan is so to arrange his marches and his lines of operations that, if he wins the battle he will not only defeat the enemy on the field, but place him in a situation of much perplexity as to

his future action, his line of retreat, and the opportunity of recuperating his strength.

Strategy and Tactics compared.

Strategy is a more complicated art than tactics, requires closer study, more exact calculation, and varies less with time.

The grand movements and general arrangement of campaigns with which strategy has to deal, depends greatly upon the topography of the theatre of war, which is almost unchanging, and except by the powers of more rapid movement and intelligence given by the railways and the telegraph, its operations have been little modified by time.

Consequently, the operations of strategy in ancient times are very similar to those of modern armies, and much valuable instruction in strategy may be derived from the study of history.

Tactics, or the evolutions of troops in presence of the enemy, on the other hand, vary largely with the arms in use at different periods; consequently the study of ancient tactics is of little more than antiquarian interest, except as regards the moral element in fight, which, depending as it does on human nature, does not vary to any very great extent.

Strategy, in itself, may be regulated by fixed laws resembling those of the positive sciences, but this is not true of the art of war as a whole, still less is it true of tactics, whose province is the battlefield, which is concerned with the actual strife of men. In the conflict of men, the passions which agitate the conflicting bodies, the warlike qualities of the combatants, the energy and talent of the commanders, all have great and permanent influence on the results. As Jomini says:

"To succeed in the field of tactics, a *leader of men* is necessary, the first of all requisites for whom is that he be perfectly brave. Such a leader must be possessed of military *coup d'œil*, coolness and skill. When a General is animated

by a truly martial spirit, and can communicate it to his soldiers, he may commit faults, but he will gain victories and secure deserved laurels."

The comparatively unchanging nature of strategical operations may be observed by studying the campaigns which have been fought from time to time through the course of centuries on the old battle grounds of Europe—on the Rhine, in the Netherlands and Belgium, and in Upper Italy.

In the latter instance a striking resemblance will be seen between the operations of Hannibal in 218 B.C. and those of Napoleon III. in 1859 A.D.

The operations of Cæsar, too, upon the Rhine will be found to resemble those of the Great Napoleon.

It is probable that this resemblance between ancient and modern strategy will not be maintained to anything like the same extent in future wars, owing to the vastly changed conditions resulting from the construction of railways and telegraphs, which diminish the chances of manœuvres by way of surprise.

Strategical Terms and their Meanings.

Instead of giving a list of terms with abstract definitions, in the manner of a dictionary, it is considered that it will be better to describe the things or ideas to which these terms have been attached.

For this purpose it will be supposed that under certain circumstances it has been decided by a nation to declare war.

The aim of every war, in its military aspect, must always be such prostration of the adversary as will compel him to give up further fighting and submit to the will of the victor.

This prostration will be obtained—

a. By victory over the enemy's forces.

b. By the occupation of the enemy's country, and the seizure of his resources.

The first will break down the resistance of the enemy, the last will make it impossible for him to organise new means of resistance.

To obtain victory over and to crush the enemy's forces is first in importance, and must be first in time.

The question first to be settled when war has been decided on is, how best it can be conducted to carry out the object of the war.

In other words, a *system of operations* must be decided on.

Choice of a System of Operations.

It is evident that the conditions governing this choice will vary greatly. When nations with conterminous boundaries are concerned, it will usually involve a balancing of the advantages of meeting the enemy on one's own or on the enemy's territory. In that case nothing but a greatly inferior force, or dissensions at home, can make it desirable to choose one's own country as the scene of operations.

When it has been decided to invade the enemy's territory, the best course appears to be to find and beat the enemy's forces, and then to march on the capital, and by its capture paralyse the organisation of the Government.

This was carried out frequently by Napoleon I.; by the Allies against France in 1814–15; by the Germans in 1870; and by ourselves in numerous small wars, such as those in China, Abyssinia, Ashanti, Zululand, Afghanistan, Egypt, and elsewhere.

The first aim of every system of operations should undoubtedly be to destroy the active forces of the enemy. As Rüstow remarks: "Armies are the principal instrument as well as the principal object of strategy, the true representatives of force in war. To act freely with his own army and to impede the action of the enemy, to maintain his own army and to destroy that of the enemy, are the dominant thoughts which should guide every general in command." (Rüstow, chap. xv. 1.)

The possession of the capital has always been of very great importance, and it is a question whether this will not be more the case in future than formerly, the effect of railways and telegraphs being to concentrate population and wealth in large centres. The examples of Russia in 1812, and of Spain during the Peninsular War, show, however, that a large and powerful

country can very well continue its defence after its capital is taken, if it has national spirit and a population ready to sacrifice themselves for their country. Here again, however, it must be expected that railways and telegraphs will greatly modify matters, enabling a successful invader to suppress popular risings with far greater ease than formerly.

Wars between Continental nations not having conterminous boundaries involve the passage, by at least one of the armies, of the intervening countries. This, although common enough in the past, can hardly be supposed as likely to occur in future, unless the intervening State is allied to one of the belligerents, or is very weak indeed; as, for instance, Roumania, in the Russo-Turkish War of 1877–78; or Afghanistan, in a war between Russia in Asia and Great Britain in India, or Siam as between France and England.

Case of an Insular Power.—The case of an insular Power engaging in war is a special one, and one peculiarly interesting to ourselves.

In this case it is evident that the first point to be decided will be the command of the sea, as without that no blow can be struck on land without a risk which is hardly likely to be undertaken.

Without the command of the sea, and with her present population, which can only subsist by enormous importations of food supplies, and her manufactures depending on foreign raw material, Great Britain could not remain independent, much less retain her Indian and Colonial Empires.

The Power possessing command of the sea will have to choose how best to strike her enemy. That is the choice Great Britain has usually had to make in war, but it has been frequently decided for her by the necessity of joining her forces to those of her Continental allies.

For instance the wars under Marlborough, the war of the Austrian succession, the Seven Years War, and Wellington's wars.

In the war of 1854 with Russia, this necessity at first induced France and England to join in the defence of Turkey, but when it became apparent that Austria could not be trusted to remain

neutral, the Crimea was attacked, as holding Sebastopol, a place of such importance that Russia was bound to exert herself to the utmost to defend it: and although the struggle was a long one, and the issue seemed doubtful for a time, there can be little doubt that the necessity for defending with all her strength a position so remote exhausted Russia in a way that could hardly have been done by any other means.

It is interesting to compare this policy with that of Napoleon in 1812, and to imagine how Germany would attack the same enemy in case of war. Probably by occupying Poland, and perhaps the Baltic provinces, and simply holding on to them.

In 1812 Napoleon's strength was destroyed by the necessity of keeping up an immense length of communication. In 1854 this difficulty was thrown on Russia, France and Great Britain having command of the sea.

It is evident that Germany, in a campaign on her Russian frontier, or even in Poland, would have communications less difficult to maintain, and with greater capacity for supply, than those of Russia, owing to the enormous size and undeveloped resources of the latter and to her inferior railway system.

An attack on Vladivostock or Port Arthur would scarcely embarrass Russia to the same extent now as did the attack on Sebastopol.

Offensive and Defensive Strategy.

The choice of a system of operations will necessitate decision whether the offensive or defensive is to be adopted.

The comparative moral and political advantages of the offensive and defensive in war have been treated of in chap. ii. Here their relation to strategy only will be dealt with.

The principal advantage of the offensive, strategically, is the power of Initiative possessed by it. This gives to the force acting on the offensive superior power of concentration, as its commander knows the point he is aiming at, and with an adversary acting on the defensive, need not fear attack, although all due precautions must be taken. The force acting on the defensive, on the other hand, not

knowing from what direction to expect attack, must be prepared for it in all, and for this purpose must spread his forces.

As an instance of this, the Waterloo campaign of 1815 may be taken. In it, Napoleon, acting on the offensive, was at first greatly superior in numbers owing to the greater concentration of his forces; the Allies, acting on the defensive, having to spread out their forces to cover all the lines by which he might advance.

The principal disadvantage of the offensive, strategically speaking, is that an invasion necessitates the keeping up of long lines of communications among a population presumably hostile. All the obstacles in the enemy's country—mountains, rivers, defiles, fortresses, &c.—are so many points favourable to the defence.

The force acting on the defensive, and in its own country, is more easily supplied; in retiring it falls back on its magazines, requires less transport, and should consequently be more mobile.

Such a force is not restricted to a single line of communications, but may take up a position threatening the communications of the invader, and base itself on any part of its territory.

For instance, the positions taken up by Osman Pasha at Plevna, in the Russo-Turkish War of 1877, on the flank of the Russian line of advance, and from which he had to be driven before the main Russian army could cross the Balkans. The British position at Quetta would be a case in point in the event of a Russian move to the Indus.

The offensive confers, at the outset of a campaign, the power of concentrating on the flank or centre of the enemy's line of defence; in such case the defender must either oppose at first with inferior numbers, or abandon the territory in order to assemble further back. If he holds his ground and is beaten, his line of defence will probably be turned or broken.

Instance.—The commencement of the Franco-German War of 1870, when the French, remaining on the defensive, and with their forces spread out along a line in front of Thionville to Strasburg, were attacked by concentrated German forces at Woerth and Spicheren, and, standing to fight, were overpowered, driven back with great loss, and their line of defence pierced.

System of Operations.

Whatever the plan of operations may be, it should be decided on beforehand, should have a definite aim, and have regard to the actual means and circumstances available.

The first condition of a good plan of operations is great simplicity, for a simple plan is easier to conceive and to execute than a complicated one.

The second condition is to limit the number and extent of the operations to be undertaken, to base them on ascertained facts, leaving a wide field for the action of the unknown in the direction of operations, so that a plan may be modified during execution as circumstances may require.

The third condition is to give to the commanding General the power to direct the great fractions of the army as circumstances and the necessities of the moment may direct.

Errors in the original concentration of the army can scarcely ever be made good in the course of the campaign, *e.g.*, Virginia, 1862; France, 1870; Eckmuhl, 1809, was an exception.

To make a good plan of any military enterprise whatever, the following rules, as laid down by Rüstow, must be attended to:

a. To simplify the operations necessary to its execution as much as possible.

b. To compare one's own forces carefully with those of the enemy, in order to decide whether one should be content with ensuring success, should hope to render it greater, or finally should more or less concern one's-self with measures to guard from the consequences of defeat.

c. To keep all the disposable force concentrated with reference to time and place, making no detachment without a well-considered object.

d. To choose, as a general rule, the shortest route to the objective, making no *détour* unless absolutely necessary from the nature of the circumstances, or without taking measures against such *détour* being prejudicial.

e. The plan should strive to gain time on the enemy, while providing for resistance to any attack by him.

f. The plan should provide reserves for unforeseen contingencies. These reserves should be really at disposal, troops employed elsewhere not being reckoned on.

g. It is superfluous to make plans which cannot be executed at once.

Finally, the commander should hold fast to the original plan, unless there are pressing reasons for altering it, and should strive with energy to gain the highest measure of success of which the plan allows.

There was no system of operations in 1899.

The Theatre of War.

The determination of the system of operations and the adoption of either the offensive or defensive will, to a large extent, have decided the locality of the theatre of war.

The term "theatre of war" comprises all the territory upon which the hostile parties may assail each other whether it belong to themselves, their allies, or to weaker States who may be drawn into the war through fear or interest.

The determination of the system of operations to be adopted and the selection of the theatre of war will involve the discussion of the different combinations of which that theatre admits, and the most favourable directions for operations.

The position of the theatre of war depends on the relative situation of the countries engaged in war, and on the system of operations decided on.

For instance, the theatre of war in a war between countries with conterminous boundaries would be the whole extent of those countries.

In a war between France and Germany, for example, the whole of France and Germany would form the theatre of war, as every portion of that territory might be invaded or have to be defended.

In the case of a war between Great Britain and Russia, there might be several theatres of war. If these Powers were equal on the sea, the theatre of war might include the whole territories of the British and Russian Empires; but with Great Britain holding, as she does, the command of the sea, the Russian territory, with the portions of British territory within reach of it by land, would alone form the possible theatres of war. One of these might include Russia in Central Asia and all India and Afghanistan; the others would be such as Great Britain might select, and be able to invade; whether on the Baltic, the Black Sea, the Persian and Armenian frontier, or the shores of the Pacific.

The Theatre of Operations.

The term "theatre of operations" is used with reference to the sphere of action of one of the belligerents only, and embraces all the territory it may desire to invade, or all that it may be necessary to defend.

Operations are the strategical undertakings of great bodies of troops.

If several independent armies or parts of armies operate within the theatre of war, it is divided into as many theatres of operations.

For instance, in the war between Prussia and Austria and South Germany in 1866, one theatre of operations was in Bohemia, and another on the Maine.

In the Franco-German War of 1870–71, during the latter period of it, there were theatres of operations at the same time in the North of France, around Paris, on the Loire, and in the South-east of France towards Belfort.

Again, in the Russo-Turkish War of 1877-78 there were two

distinct theatres of operations, one in Turkey in Europe, the other in Armenia.

Choice of the Theatre of Operations.—Variety of choice of the theatre of operations may be given by the topography of the theatre of war.

For instance, in a war between France and Spain, as the Pyrenees only allow the passage of large bodies of troops at their eastern and western extremities, a French force invading Spain by the east side of the Pyrenees would have its theatre of operations in Catalonia and Aragon. If its advance was by the west side, Castile, Leon, and Estremadura would form the theatre of operations.

A Power possessing the command of the sea has considerable variety of choice.

For instance, the armies of Great Britain, during the Peninsula War, operated from Mondego Bay, from Lisbon, the coast of Andalusia, parts of the eastern coast of Spain, and from harbours in the Bay of Biscay.

During the Russian war of 1854 the French and English armies operated in Bulgaria, and afterwards in the Crimea.

During the Franco-German War of 1870 the French proposed to land a force to operate in North Germany, and preparations were made for the purpose, which their early disasters diverted to other purposes.

The advantages of sea power and British commercial relations with every part of the world were strikingly displayed 1899–1902.

The strategical reasons governing the choice of the theatre of operations would comprise—

a. The convenience and security of the base of operations.

b. The position of the enemy's forces.

c. The roads leading to the objective point, and its proximity to the base of operations.

d. The fitness of the topography of the theatre of war to the action of the troops.

Political reasons may necessitate the choice.

For instance, Austria, in the French Revolutionary wars, having to cover the South German States to retain their alliance, had to attempt to operate beyond the Rhine.

Prussia, in the Jena campaign in 1806, was compelled to choose an advanced theatre of operations in order to cover Saxony and Hesse-Cassel.

In the Russian war of 1854 the doubtful attitude of Austria caused the French and British to give up any idea of carrying the war beyond the Danube.

Napoleon III. hoped for the co-operation of South Germany and Austria in 1870.

The Objective Point, or Object of Operations.

The object against which the strategical operations are directed, such as the army of the enemy or the enemy's capital, is called the object of operations, or objective point.

This is determined by the object of the campaign. If this be offensive, the objective point will be the possession of the hostile capital, or that of a province whose loss would compel the enemy to make peace.

As illustrations of hostile capital cities being made the objects of operations, we find that Napoleon made Berlin, Vienna, Madrid, and Moscow his objective points on different occasions, and that in 1814, 1815, and in 1870, Paris was so treated.

In the Austro-Prussian War of 1866, Vienna was made the objective point.

In the Russo-Turkish Wars of 1828, and 1877–8, Constantinople has been made the objective point, and in the latter year the jealousy of the other Powers of Europe would have prevented the Russians from capturing it, but they were almost exhausted when they passed Adrianople.

Although the ultimate objective may be the capital of the hostile country, the attainment of this objective cannot be ensured until the enemy's army is beaten. This must always be the first object, and can only be obtained by means of a battle, the decisive act of war which controls and determines all other operations.

Strategic Points.

Every theatre of war contains within it certain places, the possession of which is of great military importance to one or other of the belligerents, either from their positions as centres of communication, or from the presence there of military establishments or fortifications; such places are called *strategic points.*

Such points as are capable of exercising a marked influence either upon the result of the campaign, or upon that of a single enterprise, are *decisive strategic points.*

Almost all capitals are decisive strategic points; Paris and Berlin for instance, and London would be so were England to be invaded. Such cities are centres of communications, possess great resources, and are seats of power and political influence.

The points of crossing of important rivers; defiles commanding mountain passes or important lines of communications, such as railway tunnels; the points of junction of important roads or railways, are all strategic points, whose importance will depend on the effect of their possession by either belligerent on the success of the strategic operations in view.

For instance, Lyons is an important strategic point as controlling the valleys of the Rhone and Saône, and being at the centre of the communications between France and Italy, and between the south and east of France.

Leipzic is a strategic point, as being at the junction of all the communications of Northern Germany.

Metz, as commanding both banks of the Moselle, and as the centre of important road and railway communication, is a decisive strategic point for any campaign in Lorraine, and its importance is enhanced by its being also a powerful fortress.

Staunton was a point of vital importance in the Shenandoah Valley, as was Newmarket.

Another description of decisive strategic points, are those

accidental points of manœuvre which result from the positions of the troops on both sides.

For instance, when General Mack was at Ulm in 1805, waiting for Russian succour to arrive through Moravia, the decisive point was Donauwerth, as its possession by the enemy would cut him off.

Again, when General Kray was at Ulm in 1800, expecting help from the Tyrol, and from the army of Mélas in Italy, the decisive point was Schaffhausen, as its possession by the enemy would take his front of operations in reverse, expose his line of retreat, and cut him off from Mélas and from his base.

In the Russo-Turkish War of 1877 the presence of Osman Pasha's army on the flank of the Russian line of advance made Plevna a decisive strategic point.

It is very interesting to observe how conflicting armies gravitate towards certain battlefields generation after generation, *e.g.*, the Fleurus triangle, Chalons, Poictiers, Tours, Roncesvalles, the Ticino, the Saal, the Leck, Belgrade, Silistria, Kossovo, Kars, Herat, Kabul.

The Base of Operations.

By the *base of operations*, is understood some place or portion of country, in rear of the army, from whence it draws its supplies while carrying out the operations.

This is, as a rule, the nearest frontier of its own country, but in operations by sea it will be some harbour or harbours on the coast in rear, in communication by sea with the country waging war, and protected by its fleet.

From the base of operations the army obtains its reinforcements and supplies, starts from it when acting on the offensive, retreats to it when necessary, and is supported by it when it takes position to cover the country defensively.

The efficiency of a base will depend greatly upon the excellence of the roads, railways, and other means of communication connecting it with the country in rear from which its stores are replenished.

The principle laid down by Jomini is "*To establish the base upon those points where it can be sustained by all the resources of the country, and at the same time ensure a safe retreat.*"

Where States in conflict have conterminous boundaries, the frontiers, if possessing good natural or artificial obstacles, may be alternately an excellent base for offensive operations, or a line of defence when the State is invaded.

Such a base to be perfect should have two or three fortified points in it of sufficient capacity for the establishment of depôts of supply; and there should be a *tête-de-pont*, upon each of its unfordable streams.

The frontiers of conterminous States are in most cases strengthened with lines of fortresses.

Napoleon I., when France was at war with Austria, usually used the Rhine, sometimes the Rhine and Switzerland, as a base of operations.

When at war with Italy, Napoleon based himself for supplies on the passes of the Alps, or Genoa, or on both; but Italy is a rich country, where the troops could get most of what was wanted.

During the Franco-German War of 1870 the German base was the Palatinate, with the line of the Rhine.

During the Russo-Turkish War of 1877 the Russian base was Roumania and the line of the Danube.

When the frontier is adopted as a base, there should always be a second line in rear to meet the case of invasion.

For instance, in the Franco-German War, behind the frontier successive secondary bases could have been formed, on the lines of the Moselle, of the Meuse, the Seine and the Loire, in France; and in Germany on the rivers Rhine and Elbe.

As war progresses, other bases may be taken up, their positions depending upon the success of the operations and the nature of the country. These bases, especially if armies are acting on the defensive, need not be parallel to the first base.

For instance, in the case of the invasion of France, *viâ* Metz, a second base might be supported on Belfort. Jomini mentions also Mézieres and Sedan, an idea which seems to have been adopted by the French with disastrous results in 1870, but he must have had in his mind a time when Belgium was not closed, by its guaranteed neutrality, to the French armies.

Jomini seems to prefer a base with two sides, almost perpendicular to each other, and forming a re-entering angle. So did Napoleon and the Germans and Federals.

It has been already mentioned that in the case of operations undertaken by sea, the base of operations is a good harbour or harbours. Such has usually been the British base in war.

For instance, during the Peninsular War, Lisbon, Corunna, Santander, and San Sebastian were among the harbour forming the base.

When Wellington was operating from Portugal, he possessed a strong line of frontier, containing the fortresses of Badajoz and Ciudad Rodrigo, and behind this were the harbour of Lisbon, the Douro, Mondego, and the Tagus, for supplying the army.

During the Russian War of 1854 the British base was first Varna, then Balaclava, the latter very insufficient and inconvenient.

When the theatre of war is largely bounded by coast-frontier, a maritime Power possessing command of the sea possesses great advantages for the selection of a base, and where the sea coast is angular it confers the power of operating against a flank.

For instance, in 1813, Wellington based on Portugal, and advancing from the Douro on the Ebro, transferred his base to the ports on the North of Spain, to which the fleet was transferred. By this means he was enabled to attack the French line of communications, fight the battle of Vittoria, and drive them across the Pyrenees.

So the Federals had great advantages from sea power and the command of navigable rivers.

Lines of Operations.

The term "line of operations" refers to the line of country by which an army advances from its base of operations towards its objective point.

The choice of the line of operations will depend largely on the means of communication available to facilitate the advance of the army towards its objective. Such a line usually follows the course of great roads, rivers, or, where such exist, railways.

As the principal roads and railways of a country usually run from one large town or city to another, the line of operations generally includes a certain number of such towns, which also act, where occupied, as depôts of supply.

It follows from this, that in countries liable to invasion, the towns lying between the frontier and the capital should be fortified. By this means the enemy will be prevented from using the roads and railways passing through them, or, at all events, his doing so will be greatly delayed. Most Belgian towns were fortified as bulwarks between France and Holland and to protect Brussels, 1648 to 1815.

The action of the fortress of Toul, on the German advance from Nancy to Paris in 1870, is a notable instance of this.

Simple lines of operations are those of an army when it is not subdivided into large independent bodies.

Double lines of operations are those of two independent armies proceeding from the same frontier, or those of two nearly equal armies which are commanded by the same General, but are widely separated in distance and for long intervals of time.

Interior Lines of Operations are those adopted by an army to oppose several hostile bodies, and having such a direction that the General can concentrate his masses and manœuvre with his whole force in a shorter period of time than it would require for the enemy to oppose to them a greater force.

Simple and interior lines, says Jomini, enable a General

British, Spanish and Portuguese *v.* French.

The French base of operations was the South of France. The Pyrenees being only practicable at their extreme ends, operations had either to be conducted *viâ* Bayonne or *viâ* Perpignan.

August 3rd, 1808—The British land at the mouth of the Mondego River, and march, supported by the fleet, on Lisbon. The French advancing, are defeated on August 21st, at Vimiera, and, under the Convention of Cintra, evacuate Portugal.

October, 1808—10,000 British troops under Baird, based on Corunna, advance towards Madrid to meet 20,000 men under Moore advancing from Lisbon. They effect a junction on December 20th at Mayorga.

Napoleon, having occupied Madrid on December 4th, advances by forced marches with 50,000 men to cut them off.

The British retreat hastily on Corunna, which they reach after great suffering and privations; a successful battle is fought on January 16th, to cover the embarkation, which is effected safely.

May, 1809—25,000 British, based on Lisbon, march *viâ* Coimbra on Oporto, recapture it from the French, and cutting off Soult from the Douro force him to make a disastrous retreat to Galicia *viâ* Lugo.

July, 1809—Wellesley, based on Lisbon, advances up the valley of the Tagus, *viâ* Plasencia, on Madrid; gains a victory at Talavera on July 27th, but, on the advance of greatly superior forces, retreats by Merida and Badajoz on Portugal.

1810—Napoleon directs 80,000 men, under Massena, on Lisbon, *viâ* Salamanca and Ciudad Rodrigo; and 60,000 men, under Soult, *viâ* Seville and Badajoz. Massena captures Ciudad in July, Almeida on August 27th, and advances on Lisbon. Wellington falls back from the Coa River, fights at Busaco, and retires behind the lines of Torres Vedras.

Soult is stopped before Badajoz, which he does not capture until March 10th, 1811.

In March, 1811, Massena is forced by want and privation to evacuate Portugal and retreats on Salamanca, followed by Wellington, who makes the Mondego River, and then Oporto, his chief base of operations.

In 1812, Wellington assumes the offensive, Ciudad Rodrigo is stormed on January 19th, Badajoz on April 6th. Being now in possession of these fortresses, commanding the roads into Spain, he leaves 20,000 men under Hill to face Soult in front of Badajoz, and on June 13th advances, captures Salamanca and marches to the Douro.

The French, advancing in force, are completely defeated at Salamanca and fall back on Burgos.

Wellington now advances to Valladolid on July 30th, then turns South, and enters Madrid.

Soult evacuates Andalucia. Hill moves to Toledo and covers the South of Spain.

On September 1st, 1812, Wellington leaves Madrid, marches on Valladolid; the French fall back on Burgos. The Allies, having assaulted Burgos vainly no less than five times, retire in October behind Ciudad Rodrigo, *viâ* Salamanca.

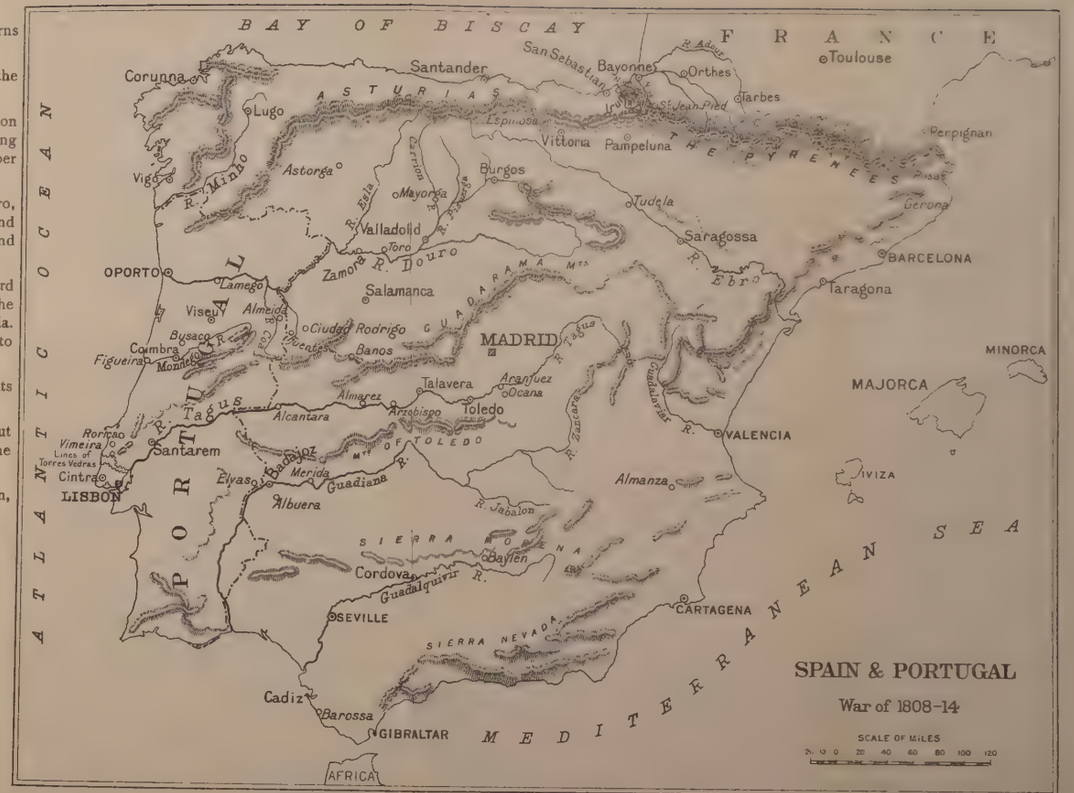
In May, 1813, the French being behind the Douro about Toro, Wellington turns that position by the march of his left wing round their flank. The French retire hastily *viâ* Valladolid and Burgos, and take position behind the Ebro.

The Allies follow, occupy Burgos, and then, marching northward through the mountains about the upper Ebro, come down on the French flank, and completely defeat them on June 21st at Vittoria. Joseph Bonaparte, in command, retires hastily and with difficulty into France, losing all his baggage and artillery.

The British force was now based on Santander, and dropped its long line of communications with Portugal.

On August 31st, St. Sebastian is stormed, the Castle holding out until September 9th. On October 7th, the French are driven over the Nivelle and the war carried into France.

The British base themselves successively on Santander, St. Sebastian, Bayonne and afterwards on Bordeaux.



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to bring into action, by strategic movements upon the important point, a stronger force than the enemy.

What has been called "the principle of interior lines," as well as many instances of what are termed "decisive points," are simply a concurrence of circumstances which render it practicable to concentrate an army in opposition to an extended enemy. When an army approaches its object by roads which meet and then again divide, the possession of the point of junction or knot of the roads, by either party, cannot but afford opportunities of menacing at once several points or roads which the enemy may desire to cover. The possession of points of this kind is of itself an important step in the campaign.

An admirable display of skill on interior lines was Jackson's campaign in the Shenandoah Valley.

The leading instance of the use of interior lines of operations is the admirable defence made by Napoleon in 1814 against the concentric advance of the Allied armies. There is a most interesting account of the strategical movements of this campaign in Sir Edward Hamley's "Operations of War," pp. 278 to 299, and in Alison, vol. xii.

Exterior Lines of Operations, in opposition to interior lines, are those formed by an army which operates at the same time on both flanks of the enemy, or against several of his masses.

Concentric Lines of Operations are those departing from widely separated points and meeting at the same point.

The advance of the Allies from the Upper and Lower Rhine and from the Pyrenees on Paris in 1814 is an instance of this; so were the movements of the Prussians in 1866, and of Fremont and Shields in 1862.

Divergent Lines of Operations are those by which an army moves upon several distinct points, necessitating the subdivision of the army.

The movement of General Brackenbury's force from Korti up

the Nile towards Berber, while the main advance was by Gukdul, on Khartoum, in the Nile Expedition of 1884, is an instance of this on a small scale.

Lines of Communication.

By the term "lines of communication" are understood those roads, railways, or other means of communication, which keep up the connection between the army and its base, and between the several portions of the army.

The lines of communication between the army and its base are also lines of supply.

As the very existence of an army depends upon its means of supply with provisions, and its maintenance in proper strength and fighting order depends upon its regular supply with ammunition and the reinforcements necessary to repair the waste inevitable to campaigning, the protection of its lines of communication is of supreme importance.

It is of almost equal importance that the connection between the different parts of an army be kept intact, otherwise concerted action will be impossible.

So much is this the case that Sir Edward Hamley lays down as two out of three principal objects of strategical movements—

a. To menace or assail the enemy's communications with his base.

b. To destroy the coherence and concerted action of his army by breaking the communications which connect the parts.

The third object given being—

c. To effect superior concentrations on particular points. To carry out which it is also essential that the communications between the bodies to be concentrated be kept up.

The same distinguished writer says: "Perhaps no situation is more pitiful than that of a commander who has allowed an enemy to sever his communications. He sees the end of his resources at hand, but not the means to replenish them. Is he to spread

his troops to find subsistence for themselves? How then shall they be assembled to meet the enemy? Shall he combine them for a desperate attack? How, if that attack fails, are they to be fed? He will then have no alternative but to make the best terms he can, or see his army dissolve like snow. Even should there be near him large available stores of food, still if the communication with his base be cut, his fate is merely postponed, for he can neither procure cartridges and balls for his rifles, shot and shell for his cannon, or recruits for his ranks, to replace the waste of battle."

Again, with each step the invader makes in advance, the difficulties of guarding his line of communications increase in proportion to its length, and the force which must be detached for its protection increases also. The force which can be collected for battle is constantly decreasing with the length of the line, till the defender may find himself, notwithstanding the losses he may have suffered earlier in the campaign, superior in number on the point of collision in the later stages, and snatching the initiative, may force his adversary to defend himself in retreat.

The principal example of the terrible effect of the severance of the line of communications of an army, is the campaign of Napoleon in Russia in 1812. In this campaign the French retreat was conducted through the country wasted and exhausted by them during their advance; the terrible cold, the snow and ice, delayed the retreat, and enabled two Russian corps to strike the communications of Napoleon where it crossed the Beresina. The terrible sufferings of the troops, and the utter break up of the French army, will be found graphically described by Sir Robert Wilson, an eye-witness, in his "French Invasion of Russia."

Napoleon thought that a commander who ignored his line of communications should be shot, yet Pope, the Federal, did so in a proclamation, 1862.

It does not always follow that an army whose communications are cut must be considered lost. The line of communications may be severed without serious results if the army can establish another line of supply, or it may, for a time, support itself on the country through which it passes.

Thus Sir John Moore changed his base from Salamanca to Corunna in 1809, and in 1813 Wellington gave up his communications with Portugal in order to base himself on the coast of the North of Spain.

In 1864, also, in General Sherman's great march through Georgia, his communications were ignored, and he maintained his army in the country he passed through until he struck the Atlantic coast, and based himself on it and the Federal fleet.

When McClellan's communications with the York River were cut he changed his base to the James by the aid of the Navy.

Strategic Positions.

Strategic Positions are those taken up for some time, and which are intended to cover a much greater portion of the theatre of operations than would be covered in an actual battle.

All positions behind a river or line of defence, where the divisions of the army are separated by considerable distances, are strategic positions.

For instance, the position of the British and Prussian armies, when waiting the advance of Napoleon in 1815, was a strategic position.

The position of the Turkish forces along the Danube, to meet the Russian advance in 1854 and in 1877 was a strategic position.

The old Chinese and Roman systems of walls and lines were tried by Villars in 1710, and easily pierced by Marlborough.

Strategic Front.

The extent of the front occupied by an army in the direction of the enemy is called the *strategic front*.

Front of Operations.

Front of Operations.—The portion of the theatre of war from which an enemy can probably reach the strategic front

or position of the army in two or three marches is called the *front of operations.*

It embraces the space separating the two armies, and includes the ground upon which the armies will probably come into collision. For example, the space between the Chiese and the Mincio, in which the French and Austrians met in 1859.

CHAPTER V

COURSE OF STRATEGIC OPERATIONS

To render the definitions given in the last chapter more intelligible, we will imagine the case of an army taking the field. The first care of the commander of such an army should be to agree with the head of the State upon the character of the war. He must then carefully study the *theatre of war*, and select the most suitable *base of operations*, taking into consideration the frontiers of the State and those of its allies.

In doing this he will have the advantage of studying the information and projects of campaign which should have been prepared by the Intelligence Department. He should be supplied with excellent maps, whatever their cost.

The selection of this base and the proposed *object of operations* will determine the *theatre of operations*. The commander will take a first *objective point;* he will select the *line of operations* leading to this point, either as a temporary or permanent line, giving it the most advantageous direction, namely, that which promises the greatest number of favourable opportunities with the least danger. An army marching on this *line of operations* will have a *front of operations* and a *strategic front*. The temporary positions which the army will occupy upon this front of operations or upon the line of defence, will be *strategic positions*.

When near its first *objective point*, and when it begins to meet resistance, the army will either attack the enemy or manœuvre to compel him to retreat; and for this end it will adopt one or two *strategic lines of manœuvres*, which, being

temporary, may deviate to a certain degree from the general line of operations, with which they must not be confounded.

To connect the *strategic front* with the *base* as the advance is made, *lines of supply*, depôts, &c., will be established.

If the *line of operations* be long, and there be hostile troops in annoying proximity to it, these bodies may either be attacked and dispersed or be merely observed, or the operations against the enemy may be carried on without reference to them. In recent times most long lines of invasion have been harassed by guerilla or partisan bands.

If the second of these courses be pursued, a large detachment must be told off to observe these troops, and a double *strategic front* will be the result.

The army being almost within reach of the first *objective point*, if the enemy oppose there will be a battle.

If indecisive the fight will be resumed.

If the army gains the victory it will secure its *objective point*, or will advance to attain a second.

Should the first *objective point* be the possession of an important fort, the siege will be commenced. If the army be not strong enough to continue its march, after detaching a sufficient force to maintain the siege, it will take a *strategic position* to cover it.

For instance, General Von Werder besieging Belfort in 1870, took up a strategic position on the Lisaine, to the west of Belfort, to cover the siege, whereas after the investment of Metz half the Second Army went on towards Chalons.

If the army be strong enough to make the best use of its victory, or if it has no siege to make, it will operate toward a second and more important *objective point*.

If this point be distant it will be necessary to establish an intermediate point of support. One or more secure cities, already occupied, will form a secondary *base*. When this cannot be done a small *strategic reserve* may be established, which will protect the rear, and also the depôts, by temporary fortifications.

When the army crosses large streams it will construct *têtes-de-pont;* and if the bridges are within important cities, earthworks will be thrown up to increase the means of defence and to secure the safety of the secondary base, or the strategic reserve, which may occupy these posts.

Should the battle be lost the army will retreat towards its *base*, in order to be reinforced therefrom by detachments of troops, or, what is equivalent, to strengthen itself by the occupation of fortified posts and camps, thus compelling the enemy to halt or to divide his forces.

When winter approaches, the armies will either go into quarters, or the field will be kept by the army which has obtained decisive success and is desirous of profiting to the utmost by its superiority.

These winter campaigns are very trying to both armies, but in other respects do not differ from ordinary campaigns, unless it be in demanding increased activity and energy to obtain prompt success.

Instances are: Austerlitz, 1805–12, the Franco-German War 1870–71, and the Russo-Turkish War of 1877–78, in both of which operations were carried on throughout the winter, also in America 1861–65. French Hussars took the Dutch fleet in the Texel'in the ice, 1795. The Japanese displayed extraordinary endurance and resource in the winter campaign of 1895.

Strategic Manœuvring.

The principal terms used in strategy having been defined and the normal course of strategic operations during a campaign explained, it remains to investigate the reasoning by which the nature of strategic manœuvring proper to carry out the object of the war is arrived at.

In order that the military commander may obtain this object, what is it best for him to do?

The answer to this, where he is equal or superior to his enemy, is, that he must first find and beat the enemy's forces.

We are told by Jomini that the favourite objective of Napoleon was "the destruction or disorganisation of the enemy's forces."

The instructions to the Generals commanding the German armies in 1870 were—"The enemy is to be sought and encountered wherever he may be found."

Napoleon's system is thus described; "Rejecting old systems, which were satisfied by the capture of one or two points, or with the occupation of an adjoining province, he was convinced that the best means of accomplishing great results was to dislodge and destroy the hostile army, since States and provinces fall of themselves when there is no organised force to protect them. To detect at a glance the relative advantages presented by the different zones of operations; to concentrate the mass of the forces upon that one which gave the best promise of success; to be indefatigable in ascertaining the approximate position of the enemy; to fall with the rapidity of lightning upon his centre, if his front was too much extended; or upon that flank by which he could more readily seize his communications; to outflank him, to cut his line, to pursue him to the last, to disperse and destroy his forces—such was the system followed by Napoleon in his first campaigns. These campaigns proved this system to be one of the very best." (Jomini, p. 89.)

The movements of large armies are, to a large extent, dictated by the necessities of supply and the roads available in the theatre of operations.

To supply large forces they must be spread over a large area, and, unless they are to move very slowly and in a long straggling column, they must be distributed over as many roads as can be found leading in the required direction.

On the other hand, when the enemy is approached and a battle imminent, it is necessary to concentrate, in order to have as large a force as possible at the decisive point at the right moment.

This necessity for dispersion on the march, and for con-

centration before action, must be borne in mind steadily when considering the operations of strategy.

Victory is ensured by superior force; by choice of the favourable time, that is to say, that moment when one is strongest and the enemy weakest; by choice of the favourable place, that is to say, where one is strongest and the enemy weakest. To ensure that the decisive battle shall be thus fought with the favouring force, time, and place, is the chief function of strategy and the object of strategic manœuvring, and will best be attained where there is a clear and precise conception of the end to be sought, an intellect which directs towards that end all the material force possible, moving towards it with steady determination, never losing sight of its object or abandoning it without absolute necessity.

Superiority of force must first be sought in superiority of number. If absolute superiority cannot be obtained, local and relative superiority should be sought for. Endeavour must be made to be superior in numbers at the point where the campaign is to be decided, that is, on the field of battle, and at that point on the field of battle where success can be obtained most certainly.

The possibility of obtaining relative superiority depends upon the concentration of our own army and the division of that of the enemy. The concentration of the army is consequently a leading rule of strategy, which may require modification, but must never be overlooked. If large armies cannot be constantly united at a single point or in a single line, it is nevertheless necessary that the bulk of this army, or the largest portion possible, should be able to concentrate on the decisive point at the decisive moment.

Detachments should not be made without a definite object; when made they should be no stronger nor last longer than is necessary to attain the desired end. In sending out a detachment it must be considered whether it is to fight or only to observe, to detain the enemy or to destroy him. Its strength should be measured when this point is decided on.

it should also be considered whether the detachment is indispensable, or whether the united army may not obtain the results sought for by acting successively while still united.

Separation or scattering of the enemy's forces is very favourable, because it allows relative superiority to be obtained at a given point; it may come about by the voluntary action of the enemy or be occasioned by our own measures. Such a result is generally obtained by making detachments, but to gain their object these detachments should compel the enemy to weaken himself at the decisive point to a considerably greater extent than they weaken their own side.

It is necessary, therefore, if action is to be *offensive*, and an objective seized, that the enemy's forces should be first sought and beaten, and for this a battle is the only means of obtaining a decisive result.

To this end it is necessary so to manœuvre as to compel the enemy to engage under circumstances disadvantageous to himself.

An army acting on the *defensive*, to obtain a similar result, will take up positions so chosen as to compel the enemy to attack them at a disadvantage.

This disadvantage may consist of inferiority of numbers, or in quality, physical or moral, of the troops, or be caused by the strength of the positions which they are compelled to attack.

The art of war, strategy, consists in bringing into action upon the decisive point of the theatre of operations the greatest possible force (Jomini, p. 113).

The choice of the line of operations is the primary means of attaining this end.

The Direction of the Line of Operations for Manœuvre.—The direction to be given to this line depends upon the geographical situation of the theatre of operations, but still

more upon the position of the hostile masses upon this strategic field.

In almost every case, however, it must be directed upon the centre or upon one of the extremities. Only when the assailing forces are vastly preponderating would it be otherwise than a fatal error to act upon the centre and the two extremities at the same time (Jomini, p. 114).

"It may be laid down as a general principle, that if the enemy divide his forces on an extended front the best direction of the manœuvre line will be upon his centre; but in every other case, when it is possible, the best direction will be upon one of his flanks and then upon the rear of his line of defence or front of operations." (Jomini, p. 114.)

At the commencing of the Franco-German war in 1870, as has been already mentioned, the strategic lines of operations of the German armies were directed on the centre of the strategic positions occupied by the French, and owing to this the forces of the latter, after the battles of Wœrth and Spicheren, were separated by the German line of advance. Metz, where the main French strength was collected, then became the first objective point. Paris being from first to last the principal object of operations. After the battles round Metz, a force was left to invest the place and the troops in it, and the advance on Paris was continued. When it was known that MacMahon's force had marched from Chalons towards the Meuse, the Germans adopted a temporary or manœuvre line of operations, whose objective was MacMahon's army. After Sedan the line of operations was again directed on the main objective point, Paris. It was a fatal mistake on the part of the French to comply with the German design; they should have been on the flank of the line of advance to Paris; the southern flank if possible.

In choosing the line of attack which will be most decisive in its results, attempt may be made to cut the enemy's line of retreat, usually his most direct line of communication with his base. Such an attack, if successful, will so augment disaster in case of defeat that the mere threat of it is likely

to disconcert any offensive measures contemplated by the threatened army.

An attempt to seize the line of retreat may be made either during battle or by measures taken in advance. In the former case the enemy would be attacked in front with intent to pierce his centre, or he would be attacked on one wing, which would be pressed back rapidly; in both cases with a view to uncover and seize the line of retreat. These operations pertain to tactics.

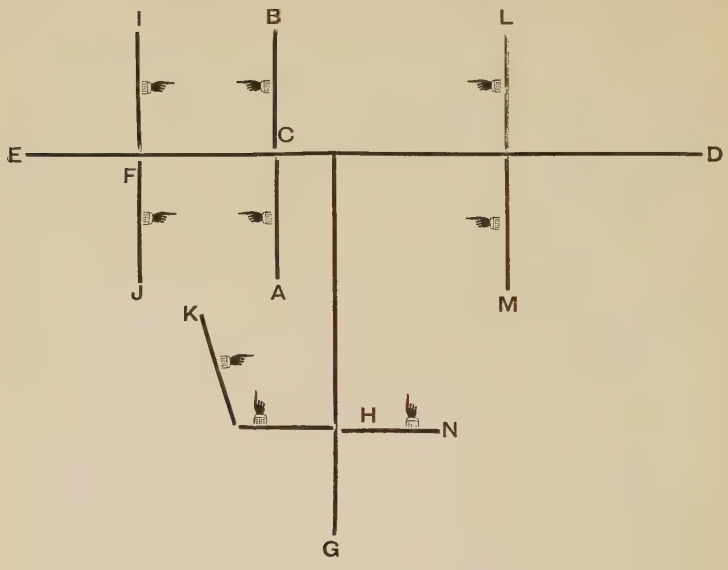
Measures adopted before the battle, on the other hand, pertain to strategy. In such case a force is directed on a point situated in rear of the enemy, who is forced to countermarch and deliver battle.

To turn the enemy and place ourselves in his rear, time is necessary to prevent him from retiring and gaining the point aimed at beforehand. To prevent this the enemy must be deceived, and rapid action is necessary. To deceive the enemy part of the forces must be left in his front, while the rest are directed on his rear; a course which violates the first law of war by dividing the army and opposing it to the danger of having its parts beaten successively. Besides this, the part of the force which has gained the enemy's line of retreat has probably been compelled to abandon its own most convenient line, which renders it liable to disaster if unsuccessful in its mission.

In order to assure success a line of operations must be chosen which allows the troops to keep as concentrated as possible.

To increase the effects of success a line of operations must be chosen as close as possible to the enemy's line of retreat; while, to lessen the consequences of possible defeat, it should be as close as possible to our own line of retreat.

The efficacy and safety of our attack may be illustrated by the following figure from Rüstow:



1. Let us suppose that the enemy is at A B fronting towards F, and with the line of retreat C D. If we are at L M on the line of operations D C, which is also the enemy's line of retreat, our success will be greatest, but it is less certain, because of the difficulty of concentrating our forces, and in case of reverse the consequences will be much more serious.
2. If we are placed at I J on the line of operations E F which is our line of retreat, the operation gives the best opportunity of concentrating our forces, but the least chance of a very considerable success and the greatest security in case of a defeat.
3. Let us place ourselves at K N on the line of operations G H which serves us as a line of retreat. This operation gives almost as good an opportunity of concentrating our forces and consequently almost as much certainty of success as the former case, it

affords equal security in case of defeat, and it besides presents many more chances of obtaining a decisive victory.

To sum up, the two fundamental principles which regulate the employment of the forces in the theatre of war are:

a. By free and rapid movements to bring the mass of one's own troops against fractions of the enemy.

b. To strike in the most decisive direction, that is to say, that direction where the consequences of the enemy's defeat may be most disastrous to him, while at the same time his success would yield him no great advantage.

The latter of these principles emphasises the necessity of rightly judging the relative importance of decisive points.

The first will condemn all movements that are disconnected or more extended than those of the enemy, as well as the occupation of too extensive a strategic position, or sending out a large detachment unnecessarily.

On the other hand, every well-connected compact system of operations will be wise, as also central lines of operations and strategic positions less extended than those of the enemy.

If your strategic positions are more closely connected than the enemy's, you can concentrate more rapidly and more easily than he can.

Thus, even when the forces are equal the strategic front should be less extensive than the enemy's; but if the enemy is in greatly superior strength a central position is dangerous, as it may be surrounded on all sides by forces superior at every point. (Jomini, p. 331.)

In such a case it will be wiser to manœuvre upon one of the extremities of the enemy's line rather than upon the centre, especially if his masses are sufficiently near to be dangerous to you.

The carrying out of the maxim to bring a superior force to bear upon an inferior force of the enemy may be comparatively easy to a commander whose army is greatly superior to that

of the enemy; but where the forces are equal and, still more, inferior, it is obvious that only strategic skill and power of manœuvre can accomplish the desired end.

In such case it is essential to deceive the enemy as to the movements intended, otherwise nothing but gross incompetence on his part can prevent him bringing up an equal force to the decisive point.

Jomini says (p. 329): "If you have one hundred battalions against an equal number of the enemy's, you may, by their mobility and by taking the initiative, bring eighty of them to the decisive point, while employing the remaining twenty to observe and deceive half of the opposing army. You will thus have eighty battalions against fifty at the point where the important contest takes place."

By acting on a simple line of operations, and with a less extended front than the enemy, it may be possible, especially with troops possessed of superior mobility and with better means of obtaining information than the enemy, to interpose between the portions of his force.

The parts of an enemy's force being thus separated, a containing force is used to prevent the reunion of the enemy's parts, while the main force strikes one of these detached portions.

The result being, that either of the parts of the separated army which stands to fight may find itself exposed to the blows of the full force of the antagonist, minus a detachment, left to contain the other part.

By alternating such blows the assailant may continue both to weaken his antagonist and to interfere between the parts.

As the commander of a separated part of an army will be playing the enemy's game if he stands to fight, his best course will be to retreat in order to re-unite, and this will be best effected by taking advantage of every position to retard the enemy on both lines.

In such a case a commander who perceives an opportunity

for separating the enemy and overwhelming a portion of his force need not generally be solicitous to cover his own communications during the operations, since the enemy will be in no condition to assail them.

It is necessary, however, to remark that the force which aims at separating the parts of an enemy should be so superior to either part singly as to preserve a superiority after detaching a force in pursuit of the portion first defeated (O. of W., pp. 153–4). See the campaign of 1809 in Germany.

Examples of Strategic Operations.

The following collection of examples of military operations, taken from Rüstow's "Military Art of the Nineteenth Century," Chapter XV., is given here as a guide to students of the Art of War. The following are Rüstow's own introductory remarks:

"Without any pretension to completeness, this collection of examples gives for every action of war a sufficient number of individual cases to reproduce nearly all the circumstances which can present themselves. In the list are included cases where military action has been projected or prepared only, but never executed. This hardly requires justification; it is, in fact, often more instructive to seek the causes on account of which a fact which should have happened has not done so, than to study the reasons which rendered the execution of a plan possible.

"We had first intended to give also a certain number of examples where economy of force, relative to time and place, had been well or ill understood, but it has been thought better to recommend the reader to study each individual case and to form a judgment upon it.

"We have given sundry examples of decision and boldness under difficult circumstances, with different results; and, on the other hand, some capitulations in the open field, also arrived at under varying circumstances. Boldness is the brilliant side of command in chief, and that which makes it shine most conspicuously.

"In studying the examples the student should note the cases in which the indecision of the commander has been the cause why success has not been obtained when the plan promised it, or where it was possible if the plan had been executed with energy."

EXAMPLES.

Simple Strategic Turning Movements.

1792. Brunswick against Dumouriez (Valmy).
1794. Scheerer against Clerfayt, on the Meuse.
1796. Bonaparte against Beaulieu (Lodi).
1800. Bonaparte against Mélas (Marengo).
1803. Napoleon against Mack (Ulm).
1806. Napoleon against Brunswick (Jena).
1807. January and February. Napoleon against Benningsen. repeated in the month of June. Friedland.
1808. Designed by Napoleon against Moore, but prevented by the retreat of the latter.
1809. Wellington against Soult (Oporto).
1812. Designed by Napoleon against Barclay, on the Duna (Witepsk).
1812. Napoleon against Barclay (Smolensk).
1813. Designed by Napoleon before the battle of Lützen.
1813. Ney against Tauentzien (Dennewitz).
1814. Napoleon against Blucher (Brienne).
1814. Designed by Napoleon against Blucher (on the Aisne, beginning of March).
1814. Designed by Blucher against Napoleon (Craonne).
1815. Blucher and Wellington against Grouchy on the Aisne.
1829. Paskiewitch against Haki-Pacha (Millidüsz).
1831. End of April. Designed by Diebitch against Skrzynecki.
1831. March of Paskiewitch on Warsaw, crossing the Vistula.
1831. Plan of Prondzynsky to stop Paskiewitch, at Lowicz.
1848. Nugent against Durando, on the Piave.
1848. Radetzki against Charles Albert (Curtalone).

1849. Radetski against Charles Albert (Mortara, Novara).
1849. Badly conceived plan of Dembinski, against Windischgraetz (Kapolna). Hungarian War.
1849. Gœrgey against Windischgraetz (Tapio-Bieske, Isaszeg)
1849. Haynau against Gœrgey (Raab). Hungarian War.
1859. Napoleon III. against Giulay (Magenta).
1862. Lee against McClellan.
1862. Jackson against Pope.
1864. Sherman in Georgia.
1864. Grant against Lee.
1882. Wolseley against Arabi Pasha.
1900. Roberts against Cronje (Boer War).

Interposition between the Enemy's Forces, or Strategic Fracture.

1796. Bonaparte against Beaulieu and Colli (on debouching from the sea coast by Genoa).
1800. Mélas against Masséna.
1800. General plan of operations of Bonaparte against the Austrians.
1808. Napoleon against the Spaniards (Burgos).
1809. Napoleon against the Archduke Charles (in Bavaria).
1812. Attempt of Barclay against Napoleon (Rudina).
1814. February. Napoleon against Blucher.
1815. Napoleon against Wellington and Blucher (Quatre-Bras and Ligny).
1831. March and April. Skrzynecki angainst Diebitch (Dembewielkie).
1831. Skrzynecki against the Russians (march against the Guards).
1848. Radetzki against Charles Albert (Custozza).
1849. Gœrgey's attempt against Haynau, on the Waag (Pered).
1849. Bülow against Prittwitz (Fridericia).
1862. Lee and Jackson against Banks, Fremont, Shields and McClellan.
1866. Falkenstein against the German Federal Army.

1870. Commencement of the German operations, the Second and Third Armies throw themselves between MacMahon and Bazaine.

1877. March of the Russians on the Balkans in the month of July.

Concentric Strategic Attack and Analogous combined Operations.

1794. Plan of Mack to attack the French on the Lys.

1795. French general plan of attack.

1796. Austrian attack against Bonaparte, to relieve Mantua.

1799. Hohenzollern and Klenau against Genoa.

1800. Plan for the Austrian War against France.

1801. Macdonald and Moncey against Trent.

1808. Lannes and Ney against Castaños and Palafox (Tudela).

1809. Soult and Victor's project against Portugal.

1810. Masséna and Soult's project against Portugal.

1811. Union of Marmont and Soult against Wellington, retreat of the latter from Badajoz.

1812. Kutusoff, Tchitchagoff, and Wittgenstein against Napoleon in retreat (Béresina).

1813. Plan of operations of Trachenberg, executed by the Allies in the month of October, Leipsig.

1813. Macdonald against Blucher (Katzbach).

1814 and 1815. Plan of operations of the Allies against Napoleon.

1831. Combined project of operations between Schachoffski, and the Grand Army of Russia (Grochow).

1831. Polish dispositions for the combat of Igany.

1847. Dufour against Fribourg and Lucerne.

1848. Charles Albert's plan of attack against Radetzki on the Mincio (Custozza).

1848. Jellachich against the Hungarians (Velencze, Ozora)

1848. Windischgraetz's plan against the Hungarians.

1849. General plan of Charles Albert against Radetzki.

1855 Plan of Napoleon III. for the Crimean campaign.

1862 and 1864. Plans of Federals against Johnson and Lee.

1866. Prussians against Benedek.

1870. The Third German Army and the Army of the Meuse against MacMahon.
1871. January. Prince Frederick Charles against Chanzy.
1877. General plan of Sulieman Pacha to relieve Plevna in the month of December.
1894. Japanese against Phong-Yang.

Simple Eccentric Retreat with Flanking Positions.

1793. Kilmaine, from Cæsar's Camp to Gaverelle.
1800. Kray to Ulm, when opposed to Moreau.
1812. Kutusoff on Tarutina, after the battle of Borodino.
1813. The Allies on Schweidnitz, after the battle of Bautzen.
1849. Gœrgey, from Pesth into the mountains.
1849. Gœrgey, from Waitzen on Losoncz, the Sajo and Hernad.
1849. Bem against Grotenjelm, at Czeretfalva and Teckendorf.
1854. Mentchikoff on Baktchiseria, after the battle of the Alma.
1862. Jackson to Brown's Gap.
1877. Osman Pasha on Plevna, against the Russians.

Eccentric Retreats of Combined Forces.

1794. York, Orange, and Cobourg, after the battle of Fleurus.
1805. Kutusoff and Meerfeld, from the Enns.
1812. First Russian plan of operations.
1813. Projected by the Prussians and Russians, after the battle of Lützen.
1831. Dembinski, Gielgud, and Chlapowski from Lithuania.
1848. The Danes, after the fight at Schleswig.
1849. Gœrgey and Perczel, from Pesth, before Windischgraetz.
1864. Meza, on Düppel and Jutland.
1870. The French Army of the Loire in the month of December, after the battle of Orleans.

Central Retreats, with Operations on Interior Lines.

1795. Clerfayt against Jourdan and Pichegru.
1796. The Archduke Charles against Jourdan and Moreau, in Germany.

1796. Bonaparte on the Mincio and Adige, against the Austrians.
1812. Retreat of Barclay and Bagration on Smolensk, after their junction.
1813. Napoleon on the Elbe, supporting himself on Dresden.
1814. February. Napoleon between Blucher and Schwarzenberg.
1848. Radetzki at Verona
1849. Schlich, from Kachau on Losoncz (between Gœrgey and Klapka).
1849. Bem in Transylvania.
1849. Mieroslawski against the Prince of Prussia.
1861–65. Confederates throughout.

Pursuits with an Effect to Cut Off or Turn.

1806. Napoleon, after the battles of Jena and Auerstadt.
1809. Napoleon, after the battle of Wagram.
1812. Kutusoff pursuing Napoleon from Tarutina.
1813. Battle of Hanau.
1829. March of Paskiewitch across the Saganlug.
1862. Jackson after second Battle of Bull Run.
1871. Werder and Manteuffel against Bourbaki, after the battle on the Lisaine.

Passages of Mountains.

1799. Passage of the Alps by Suwarroff.
1800. Passage of the Saint Bernard by Bonaparte.
1800. Passage of the Splügen by Macdonald.
1828. Passage of the Tchildir by Paskiewitch.
1829. Passage of the Balkans by Diebitch.
1866. Passage of the Glatz Mountains by the Army of the Prussian Crown Prince.
1877. The two passages of the Balkans by Gourko.

Passages of Rivers.

1797. Bonaparte crosses the Po and the Mincio.
1799. Masséna crosses the Limmat.

1799. Attempt of the Archduke Charles to cross the Aare.
1800. Moreau crosses the Rhine.
1805. Massena crosses the Adige at Verona.
1809. Napoleon crosses the Danube at the island of Lobau in May and July.
1812. Napoleon crosses the Beresina.
1813. Blucher crosses the Elbe at Wartenburg.
1814. Blucher crosses the Rhine at Caub.
1828. The Russians cross the Danube at Satunowo.
1831. Diebitch crosses the Narew at Ostrolenka.
1831. Paskiewitch crosses the Vistula at Osiek.
1849. Haynau crosses the Raab.
1849. Ramberg crosses the Theiss at Kanisa.
1854. The Russians cross the Danube at Galatz and Silistria.
1864. The Prussians cross the Schlei at Arnis.
1870. The Germans cross the Moselle in August.
1870. Ducrot crosses the Marne (Villiers-Champigny).
1877. The Russians cross the Danube at Braila-Galatz and at Simnitza.
1861. McDowell at Bull Run.
1862. Burnside at Fredericksburg.
1862. Lee on the Chickahominy. McClellan on the same river.
1862–3. Burnside and Hooker on the Rappahannock.
1862–4. Mississippi, Tennessee, Chattahoochie.

CHAPTER VI

STRATEGY AS INFLUENCED BY THE PHYSICAL FEATURES OF A COUNTRY

Mountains, rivers, and the other physical features of a theatre of war, influence strategy principally by their effect on the direction and nature of the means of communication, whether roads, railways, or transport by sea, river, or canal.

The study of the topography of any country will show that it is the physical features mainly which have dictated the direction taken by the great roads and channels of communication, for which it has been sought to find the easiest routes.

The expense and labour necessary to build bridges over streams of any width, tend to lessen their number, and the consequent points of easy passage.

In a similar manner the necessity for easy gradients on roads over which heavy traffic is to pass, makes the construction of roads over the natural ridges formed by ranges of hills or mountains difficult and expensive; consequently such roads will be few and far between in proportion to the physical difficulties to be surmounted, and their number will increase with the state of civilisation of the adjacent countries and the amount of commerce for which transport is required.

This difficulty of throwing bridges over a wide stream, or of making roads over a high range of hills, causes the roads on each side to converge as they approach the obstacle, which is crossed by but few roads of such a nature as to be fit for the communications of a great army.

Instances.—North Italy. A study of the map of Northern Italy shows it to be a great basin surrounded by mountains,

War of 1796. French *v.* Austrians and Piedmontese.

The Allies are drawn up behind the Apennines, 22,000 Piedmontese are on the right before Ceva, 30,000 Austrians on the left in front of d'Aqui.

The British Fleet is at Genoa.

A French force holds the Alpine Passes. Bonaparte with 36,000 men is along the road from Nice to Genoa.

On April 12th Bonaparte attacks the Allies, defeats and divides them, leaves a corps to observe the Austrians while he drives the Piedmontese through Ceva towards Turin, and forces them to conclude an armistice which, on May 25th, becomes a peace.

The Austrians fall back on the Po about Casale.

Bonaparte shows front to hold them there, while he sends a force, which seizes Placenza and the passages of the Po, on the 7th of May.

The Austrians fall back to protect their communications.

Attacked and defeated at Lodi, they fall back behind the Adda. Again defeated, they retire behind the Mincio, and then behind the Adige.

Bonaparte occupies Verona and lays siege to Mantua.

The Austrian Armies, reinforced, advance to raise the blockade in July, in September, and again in November.

Bonaparte, with wonderful skill, takes advantage of his central position to defeat their armies in detail as they advance, partly from the Tyrol and partly from Venetia.

Finally, in March 1797, he drives them out of Italy and advances on Vienna, when the Peace of Campo-Formio is concluded.

In 1799, Austria reconquers the Valley of the Po.

War of 1800. French *v.* Austrians.

40,000 French, under Massena, hold the Apennines from Genoa to Mt. Cenis.

50,000 Austrians occupy Piedmont and watch the Alps, 70,000 face Massena.

Massena, attacked on April 5th, is blockaded on the 18th of April in Genoa, which capitulates on the 4th of June.

On May 13th, Napoleon crosses the Alps by the St. Bernard and St. Gothard Passes with 60,000 men, surprising the Austrians. He marches through Novara, seizes Milan on the 2nd of June, and occupies Brescia and Cremona. Changing his base to Switzerland he now faces south, crosses the Po, seizes Piacenza, and thus completely severs the Austrian communications.

Napoleon now marches west towards Alexandria, defeats the Austrians at Montebello, and after a long and doubtful battle, completely defeats them at Marengo.

On June 15th, the Austrians make peace and evacuate Italy as far as the Mincio.

War of 1859. French and Sardinians *v.* Austrians.

War is declared on April 26th.

The Piedmontese, 60,000 strong, take post behind the Po about Casale awaiting the French.

120,000 Austrians mass behind the Ticino about Pavia.

From April 29th to May 20th the Austrians are in Piedmont and threaten Turin.

On May 20th, the French, advancing from Mt. Cenis and Genoa, having joined the Piedmontese about Alexandria, advance.

An Austrian advance is repulsed at Montebello. The French then threaten Placenza, but massing on their left, march through Buffalora on Milan, defeating the Austrians on June 4th at Magenta.

The Austrians retire behind the Mincio, followed by the Allies. A French Corps in Tuscany also marches to threaten Mantua.

On June 21st, the Austrians recross the Mincio, and on the 23rd are defeated at Solferino.

Peace is now concluded, Austria surrendering Lombardy.

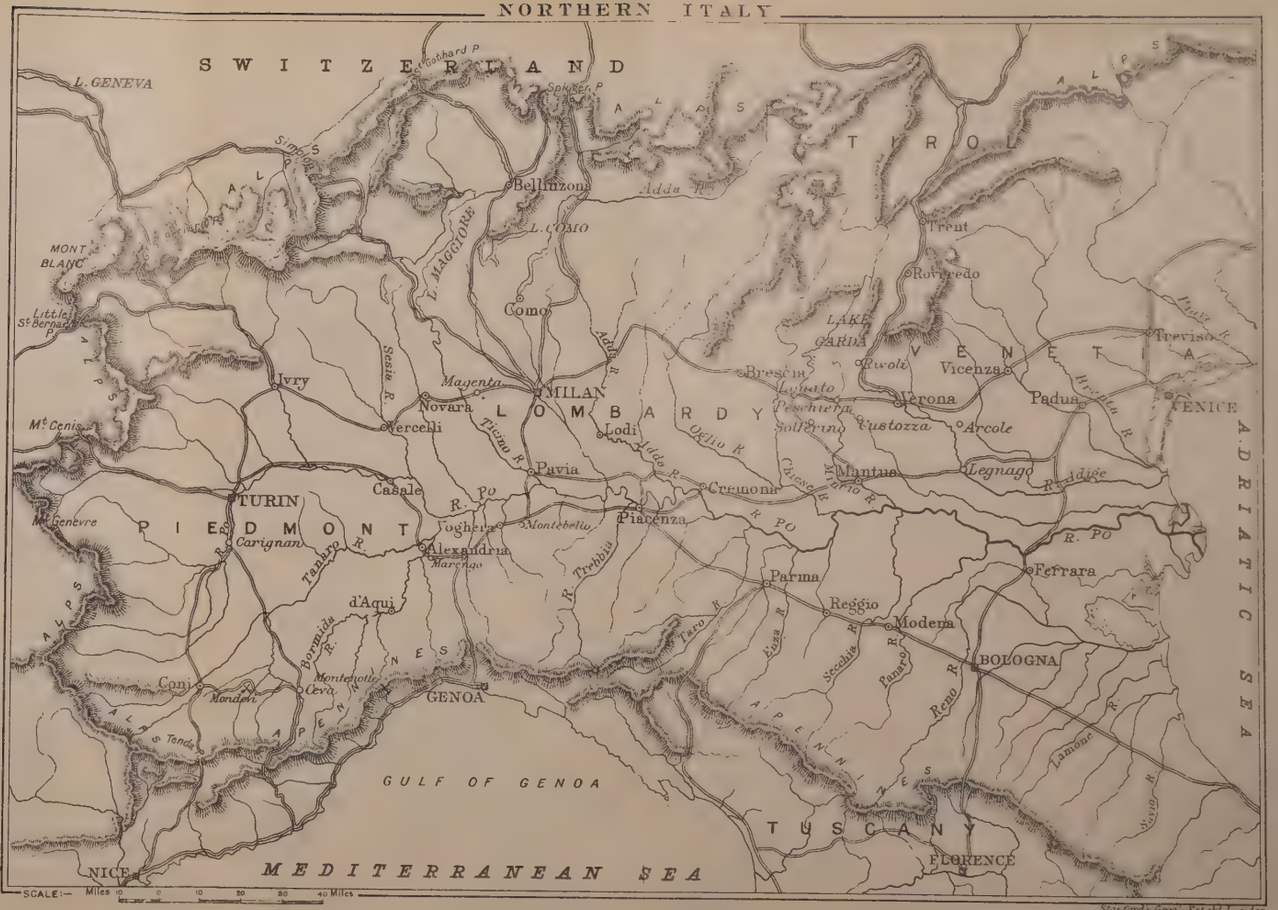
War of 1866. Italy (with Prussia) *v.* Austria.

100,000 Austrians occupy the Quadrilateral, south of Lake Garda.

Two Italian Armies are formed, one under the King, 120,000 strong, behind the Oglio, the other, 80,000 strong, on the lower Po about Ferarra, under Cialdini.

On June 23rd, the King's Army, 100,000 strong, crosses the Mincio south of Peschiera, but is attacked by the Austrians, 75,000 strong, in flank, and defeated at Cuztozza.

The disaster of Sadowa caused the Austrians to retire a few days after and evacuate Venetia, the Italians following. An armistice ensues followed by a peace.



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drained by the river Po and its affluents. In consequence of the mountains on the north and west, but few means of access for an army exist in these directions, while the close approach of the spurs of the Apennines to the Po about Piacenza reduce the communications south of that river to a single good road at this point. To the north of the Po, the roads parallel to it are more numerous, but are still few in number, owing to the difficulty of bridging the Sesia, Ticino, Adda, and other rivers running from the Alps to the main river. South of Lake Garda the mountains approach the Po on the north, while the river Adige, running through a gap in the Alpine range, and in its lower course parallel to the Po, adds to the difficulty of communication. This portion of country is consequently of great strategical importance, as through it pass the roads from Austria to Italy, both by the valley of the Adige to the north, and between Venice and the Tyrolese Alps to the east. The importance of this territory was accentuated by the construction of the celebrated "quadrilateral," composed of the fortresses of Peschiera and Mantua on the Mincio, and Verona and Legnano on the Adige.

The decisive strategic points in such a country as North Italy will be few and well marked, and great openings will exist for the display of strategic skill in warfare.

Balkan Peninsula.—The theatre of the wars waged in Europe between Russia and Turkey affords another interesting study of the influence of physical features on strategy. In advancing southwards, Russia has to cross the Danube and other rivers running into the Black Sea; the Carpathian Mountains contract her movements to the north; while after crossing the Danube, the range of the Balkans has to be traversed before Constantinople can be reached. The Black Sea coast to the east affords a base of operations to that Power which possesses command of the sea, while the nature of the country west of the Balkans allows operations to be carried out on the flank of the Russian line of operations.

A study of the campaigns in this region shows the great strategic strength of the Turkish position, as long as she or her allies possess the command of the Black Sea. The exposure of the Russian line of communications to attack from the west

must always give Austria a dominating influence, and tends to prove that as long as Austria remains powerful and Russia is weak as a naval Power, the latter must sigh in vain for the possession of the Golden Horn.

Pyrenees.—The mountain barrier of the Pyrenees between France and Spain greatly influences the strategy of campaigns between these two countries. It is only at the extremities of these mountains that good roads exist, which limits invading armies to the choice of one or the other for its line of operations.

Influence of the Nature of the Soil and its Cultivation.

The nature of the soil and its cultivation influence strategy by their effect on the communications, and on the amount of supplies obtainable.

Where the surface of the country is either rough, soft, covered with vegetation difficult to penetrate, or cut up with canals, dykes, or fences, the marching of troops will be confined, more or less, to the roads, and the movements of an army will be crippled in proportion as these roads are few and bad in quality.

Cavalry are unfit for use in a country where their movements are confined to the roads, except for purposes of reconnaissance and patrolling, for which a proportion of mounted men are necessary in any country.

Thus, in great part of the north of Italy, where the country is covered with a network of irrigation canals, cavalry would be useless in large bodies; the same holds good of Holland and the Delta of the Nile in Lower Egypt. The country about Kandahar would be difficult for cavalry to operate in for the same reason, as well as any other portion of country depending on irrigation for its crops. Similar reasons prevent the use of cavalry in bodies in rocky and mountainous countries.

Artillery cannot be used where the roads are unfit for wheeled traffic, except in the form of mountain or other special guns, capable of pack transport.

War of 1828-9. Russians *v.* Turks.

The Russians possessed command of the Sea, the Turkish Fleet having been destroyed at Navarino in October, 1827.

In May, 1828, 100,000 Russians cross the Pruth; about as many Turks are collecting at Shumla.

The Russians cross the Danube below Braila, occupy the Dobrudsha and proceed to invest Silistria, Shumla and Varna, their fleet co-operating.

Varna capitulates on October 12th; the Russians, suffering from disease and privation, retire into winter quarters north of the Danube.

The European Powers become alarmed. Austria places 80,000 men on her S.E. frontier.

On February 4th, 1829, the Russian Fleet seize Bourgas, thus providing a base south of the Balkans.

The Russians under Diebitsch cross the Danube in April, besiege Silistria, occupy Varna, and observe Shumla.

On July 8th Silistria falls, on July 12th the Turks are completely defeated near Shumla.

Diebitsch, masking Shumla, now crosses the Balkans, defeats the Turks at Aïdos, communicates with the fleet at Bourgas, again defeats the Turks, and occupies Adrianople on August 20th.

Diebitsch's force is reduced by sickness and want to 20,000 men. The Powers intervene. The Peace of Adrianople is signed on September 14th, 1829.

War of 1854. Russians *v.* Turks, French and British.

In July, 1853, 50,000 Russians occupy Roumania.

By Oct., 1853, Turkey has collected 134,000 men on the Danube.

In Nov., 1853, the Russians destroy the Turkish Fleet at Sinope. France and Britain declare war and their fleets enter the Black Sea.

In March, 1854, 33,000 Russians cross the Danube at Braila, Galatz and Tulcha, and by April 11th occupy the Dobrudsha up to Trajan's Wall. By May 16th Silistria is besieged by 45,000 Russians.

45,000 Turks are at Shumla, 6,000 at Varna, 18,000 in Silistria, 10,000 at Rustchuk, 20,000 at Widdin, Omar Pasha in chief command.

The French occupy Gallipoli, the British Scutari, both send troops to Varna; by June 40,000 of them are collected north of the Balkans.

Austria assembles an army on her S.E. frontier and calls on Russia to evacuate Roumania. On June 23rd the Russians raise the siege of Silistria and slowly retire.

On August 6th, 1854, the Turks occupy Bucharest.

The Allies send an expedition into the Dobrudsha, while preparing secretly to invade the Crimea.

On September 1st the Allies commence to embark at Varna; by September 14th 62,000 of them are landed in the Crimea.

No further operations take place in the Balkan Peninsula.

War of 1877-8. An Insurrection in Herzegovina and Bosnia in 1875, followed by War between Turkey and Servia and Montenegro, brought about a European Conference in 1877. This fails to settle matters, and Russia goes to War with Turkey.

Turkey possesses the command of the Sea.

Between April 23rd and May 3rd six Russian Army Corps enter Roumania and deploy along the Danube between its mouth and the Aluta River. Two Corps guard the coast from the Danube to the Crimea.

Fighting on and across the Danube ensues.

On June 22nd the Russians cross the Danube at Galatz and by July 19th had occupied the Dobrudsha up to Trajan's Wall.

On June 27th the main Russian force begin to cross the Danube below Sistova, and by July 2nd establish a bridge of boats.

At that time 100,000 Turks occupied the quadrilateral—Rustchuk, Shumla, Varna, Silistria. Osman has 30,000 at Widdin. Two Corps are in Montenegro.

Deploying troops east and west of Sistova, the Russian vanguard crosses the Balkans on July 7th, captures the Shipka Pass on July 19th, clears the country to its south and prepares for the advance on Constantinople.

The Turkish Corps in Montenegro are hastily embarked, land at the mouth of the Maritza River, march up its valley, and drive the Russians back across the Balkans and occupy the south end of the Shipka Pass, but fail to force it. Meanwhile, Osman, advancing from Widdin, has taken post at Plevna, where, on July 20th and July 30th, he repulses attacks on him with most bloody loss.

The Russians, checked, assume the defensive and wait for reinforcements.

The Turks about Shumla attempt the offensive, but fail, their commanders refusing to co-operate.

The Russians, reinforced, make a third attack on Plevna on Sept. 11th, but being repulsed with a loss of 18,000 men, are again checked.

The Russians, repelling the isolated attacks of the Turkish commanders, are again reinforced and invest Plevna in force.

Plevna surrenders on December 10th, 1877.

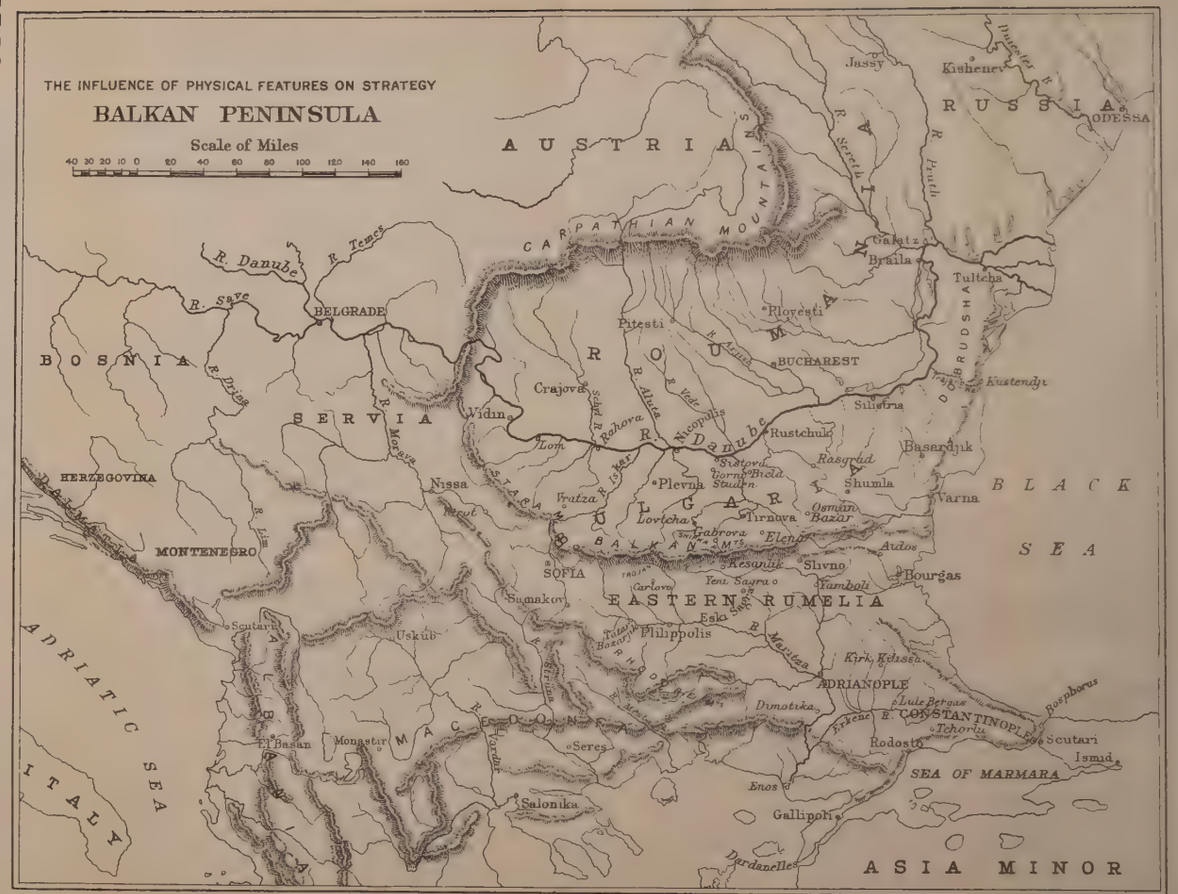
The Turks evacuate Bulgaria, concentrating about Tatar-Bazarjik.

The Russians, advancing from Shipka to Sofia southwards, drive the Turks before them and occupy Adrianople without resistance on January 20th.

The Turks sue for peace. An armistice is signed on January 31st at Adrianople, by which the Russians occupy the line of heights defending Constantinople.

The British Fleet enter the Black Sea.

The Russians advance within 6 miles of Constantinople to San Stefano, where a preliminary peace is signed on March 3rd, 1878.



Thus in the mountainous portions of Afghanistan, and for the minor campaigns waged against the hill-tribes on the Indian frontier, ordinary field guns cannot be used. The same is the case in great part of Switzerland, in the Austrian Tyrol, and also in Bosnia.

Physical Features as Strategic Obstacles.

An obstacle, in order to be such in a military sense, must present advantages for defence, and must also prevent the approaching columns from deploying while passing it. A single defile of any kind, a causeway over a swamp, a bridge leading to commanding ground, or a mountain pass fulfils these conditions.

In crossing a range of mountains the enemy must advance on a narrow front, and on issuing can be attacked with superior numbers before the head of his column can deploy.

This necessary division of his forces gives the defender an opportunity to attack the separate portions. Thus, in the wars between Austria and Prussia, in 1757 and 1866, the Prussian invading columns were liable to be crushed in detail.

The best method of effecting a passage of a range of mountains is to make feints on many points, while the main body enters at a single point; the St. Bernard Pass was thus crossed by Napoleon in 1800.

The combatant who holds possession of the passes over a range of mountains has the power of delaying the advance of the enemy with relatively weak forces, thus giving time for his own forces to concentrate, and limiting the enemy to a few difficult lines of supply.

Sir Edward Hamley considers that the best method of defending a mountain range against an advancing enemy is to hold the passes with detachments, these being only of sufficient strength to retard his advance, while the main force assembles at a point where its presence will oblige the enemy to form front to a flank.

Mountains.—That mountain passes are not, of themselves, insurmountable obstacles, history affords numerous instances; among others—

The passage of the Alps by Francis I., in October 1524, described by Gaillard.

Napoleon's passage of the Saint Bernard, and MacDonald's Splügen Expedition, prove that there is truth in the remark of Napoleon, that an army can pass wherever a man can set his foot.

Frederick the Great said that wherever a goat passes, a soldier may pass.

In wars comparatively recent, several instances occur of the passage of mountain ranges in face of an enemy.

Thus in 1866 the Prussian armies of the Elbe and of Silesia crossed the Erzgebirge and Riesengebirge into Bohemia.

In 1870 the Third German Army crossed the Vosges mountains after the battle of Wœrth. Turenne had manœuvred with skill in the same mountains.

In 1877 the Russians crossed the Balkans twice.

In 1878–9 the British crossed the mountains occupied by the enemy in their advance on Kabul. The British have made many extraordinary marches over hills in India.

Rivers as Obstacles.—Rivers differ from mountain ranges as obstacles, inasmuch as the defenders can deploy along the banks, and bring fire to bear on bridges or other points of crossing; there are also more practicable points of passage, and roads usually run along both banks.

The crossing of rivers in face of an enemy is usually managed by manœuvring. The method which the experience of war shows to have been most successful is to drive all the hostile troops to the far side, occupying the banks with a line of posts and vedettes; a point of crossing must then be selected, and a plan determined on, the preparations being made with all possible secresy, and the enemy, if possible, deceived and surprised. To attempt to pass an unfordable river, at a known point, in presence of a pre-

pared enemy, demands a great superiority of force, especially of artillery.

The following instances of large rivers crossed in face of an enemy should be studied:

That of Napoleon crossing the Elbe near Priesnitz in 1813.

Napoleon crossing the Danube at the Isle of Lobau in 1809.

General Moreau crossing the Rhine in 1796 and 1797.

The passage of the Ticino by the French in 1859.

General Burnside crossing the Rapahannock in 1862, when he crossed, but was afterwards driven back by General Lee.

The crossing of the Danube by the Russians in 1877.

General Conclusions.

The following general conclusions are arrived at by Sir Edward Hamley (Operations of War, p. 262):

1. Neither mountain chains nor rivers afford permanent lines of defence, unless exceptionally; nor do they balance, in any appreciable degree, the disadvantage of having a decidedly inferior force.
2. As in other cases, so with the passage of a river, if the defensive line be too extended, it will be best to pass the obstacle in front,—otherwise to turn the flank of the enemy.
3. In the case of so turning his flank, the risk incurred by the turning force in case of defeat will be lessened by the river, since the enemy must cross the river to intercept it.
4. The army defending the river, finding its flank turned, will usually concentrate against the enemy that has crossed, and not attempt to cross itself.
5. Such a counter-stroke may be most decisive if it can be made.
6. The defender's most effective action on his own bank will be against the outward flank of the turning force, if it advances on a front perpendicular to the river.

7. The passage of a river at points deliberately defended are difficult, doubtful, and costly to the assailant in men and time.

The true use of rivers as obstacles is not merely to increase the means of passive resistance, but to give the possessor increased power of manœuvring offensively, and of taking the enemy at a disadvantage, by attacking when his forces are divided in crossing it.

For defensive purposes they may be used—

1. To cover a flank movement.
2. To afford an opportunity for rallying a beaten army.
3. To enable part of an army to hold a forward line and protect territory until reinforcements arrive.
4. To enable a rear guard to cover a retreat.

It is a mistake to suppose that it is unadvisable to fight with a river in rear if its passages are assured, sufficiently numerous, and at such a distance as to leave full space for the retiring troops to file upon the passages behind their rear guards, *e.g.*, the Mincio in 1859, and the Elbe in 1866.

Rivers are also valuable to form fresh bases for an army invading a country, certain points being strongly held as depôts.

Thus the line of the Moselle, with Thionville, Metz, and Nancy thereon, and the line of the Meuse, with Montmédy, Verdun, and Commercy, might have been used as bases by the Germans in the latter part of the war of 1870–71.

CHAPTER VII

THE STRATEGIC USE OF FORTIFICATION

General Principles.

The object of war, which is, as already pointed out, to procure the complete submission of the foe, is striven for by means of the Art of War, having as its guiding principle to bring, at the right time and place, a superior force to bear upon an inferior force of the enemy.

Fortification is one of the means by which the Art of War seeks to attain this end, and, as such, belongs to the domain of both strategy and tactics; the technical design and construction of fortifications, as well as of the works necessary for their attack and defence, forming part of the duties of the military engineer, whose science assists all the operations of the Art of War.

The above considerations, although they may be considered as military truisms, are of great importance, and cannot be too firmly impressed upon the military student, history showing most conclusively the great danger that fortification, too technically regarded, may come to be looked upon as an end in itself, apart from its general influence upon strategy, and, thus treated, may have disastrous effect upon the result of a campaign.

On the other hand, such misuse of fortification produces reaction, and a tendency to regard all fortification as useless: a conclusion equally erroneous, contrary to all the sound principles of the Art of War, and having results equally injurious.

At the risk therefore of repetition, the following principles may again be stated:—

The Art of War strives to bring a superior force to bear upon the enemy at the decisive point.

In order to attain this end—

Strategy decides the time and place for concentrating the forces on the theatre of war.

Tactics fulfils the same function on the field of battle.

Logistics arranges for the necessary movements of the troops.

Military engineering science assists in all these operations.

The object of fortification is to assist in obtaining local superiority over the enemy by artificial means, namely, by so altering the surface of the ground as to enable an inferior force to resist one superior to it.

It is thus essentially defensive in its local application, although it may aid offensive operations by freeing a larger number of men to take part in them.

Looked at strategically, fortification, to be of value, must assist in the primary requirement of the Art of War, to bring a superior force to bear upon the enemy at the right time and place. If it does not do this, it must be injurious in its effect, however excellent in design or construction.

It must be remembered that, as a rule, battle in the open can alone bring about a decisive result, and the aim of all fortifications should be to increase the power of the forces available for action in the field.

The modes by which fortification may thus assist in strengthening the army in the field are as follows:—

1. By enabling the base, communications, supply depôts, &c., to be held by a smaller number of men.
2. By enabling portions of a frontier, theatre of war, or field of battle to be held by a comparatively weak force, thus freeing more men for offensive action elsewhere.

3. By decreasing the power of the enemy, by compelling him to mask or besiege fortified places with forces greatly superior to their garrisons.

Only a great battle can decide a campaign, and the only real means of victory is superiority in the field. If, from temporary causes, this superiority is not acquired or recovered, time must be gained to create new resources and regain equilibrium.

It is to aid in this that the army seeks the aid of fortification. Time may either be gained by yielding ground and falling back on reinforcements, or by delaying a decisive battle to allow reinforcements to join.

The latter necessitates the use of the defensive or demonstrative, and has only been possible since the introduction of long-range arms and of earthworks. The former plan is limited by the size of the theatre of war, and the preservation of a base of operations, and must ultimately be resolved into the second plan.

In any case the use of fortified ground and big guns of long range will make the proceedings more effective, and these adjuncts to defence take their most complete form in the fortress, whether its effect is brought in before, during, or after the decisive battle.

The Influence of Fortification on Strategy.

Definition of Fortification.—Fortification is described as the art of obtaining protection from the attacks of the enemy by changing the form of the ground occupied, and is, in that respect, a branch of defensive tactics.

The success of tactical operations, whether offensive or defensive, largely depends upon the nature of the ground on which they are carried out. The choice of suitable ground for occupation is one of the most important operations of defensive tactics, skill in its selection being rightly considered one of the most valuable and necessary qualities in a commander. The art of fortification consists in improving the natural tactical advantages of the ground by artificial means.

The object of fortification is, by the artificial defences it

constructs to enable a smaller force to contain a greater, or, in other words, to keep a larger body in check.

While fortification, in its adaptation to given localities, may be considered to appertain to tactics, the choice of those places or positions, within an actual or possible theatre of war, which are to be fortified, is no less within the province of strategy.

Permanent and Field Fortification.

Fortification is divided usually in two branches, permanent fortification and field fortification; but between simple field intrenchments and the permanent fortress are many intermediate forms: the former may advance, by development in the course of a campaign, to almost the tactical importance of the latter, while their strategical importance, when placed at well-selected points, may exceed that of existing fortresses.

There is no doubt that the tendency of modern mechanical inventions has been to somewhat lessen the superiority of permanent over field fortification.

Railways, by their great capacity for transport, allow the armament and provisioning of fortified places more rapidly than formerly, and even facilitate, by means of the concentration of plant and labour, the construction, during a war, of new places sufficiently strong to resist an assault.

The improvement of artillery, with its increased accuracy and penetration and the use of curved fire, enables masonry to be breached with certainty even when unseen, and renders the art of defilade far more difficult. At the same time its increased range, while rendering the attack more easy at long ranges, forces the besieger to commence his works at a greater distance from the place.

The improvement in small arms in range, accuracy, and, above all, in rapidity of fire, has enormously diminished the possibility of a successful assault.

It will be seen that all these modifications tend to remove the great difference in value which formerly existed between the temporary and permanent work; and enable

entrenchments, hastily constructed and armed, to vie in importance with permanent fortifications.

When Fortification should be Permanent and when Temporary.

It may be said that those places in a country whose possession it is of vital importance to deny to an invader; should be fortified permanently, or that sufficient permanent works should be provided to enable the defence to be so speedily completely organised as to remove all possibility of their capture by surprise. This will always include the capital * of the country, the great arsenals, and the depôts of supply; including, in a maritime country, the great naval dockyards and large mercantile ports, as well as the ground commanding any harbours or roadsteads of great importance.

Points whose possession may become of great strategic importance during a campaign or in certain phases of invasion, may, on the other hand, be defended by works raised when the occasion should arise; but even in this case the nature of the works required should be carefully studied beforehand in time of peace, and plans with estimates of the time, labour, and materials required, prepared. It may even be desirable, where such points are near a frontier, to have a central work prepared beforehand to act as a centre for the intrenched camp to be formed, in which stores and war material may be guarded from sudden attack.

Finally, it may be observed, that the experience of recent wars appears to indicate that, even where fortifications are permanent, in the sense of being prepared in time of peace and kept constantly organised for defence, they need not be of that solid and expensive nature which has been considered necessary in the past.

"The final end of all defensive action is to maintain possession of a given point in order to gain time, which is one of the

* But Pierron and the authorities prefer to fortify positions on the flanks of the line of advance to the capital. I advise a study of Clarke's Fortification.—The EDITOR.

principal objects of war. Fortification, advancing with the improvement of firearms, allows works to be established on given points in time of peace, and offers in itself an important means of securing that time which it is the chief aim of the defensive to obtain. What permanent fortification does by the aid of almost unbounded resources for points of permanent importance, field or semi-permanent fortification does for points whose importance is but temporary or is unforeseen." (Bornecque, p. 340.)

The above considerations respecting permanent and temporary fortifications point to the conclusion that permanent works should only be established with the utmost circumspection :—

1. Because they require a very considerable outlay ;
2. Because they are necessarily familiar to the enemy and have been long studied by him, and he takes his measures accordingly ;

Objections which do not apply, except in a very minor degree, to works of a more temporary construction.

M. Viollet-le-Duc considers, that except for very special purposes, such as the defence of the capital, arsenals, and very important points, the day of permanent works is over. He considers that, in future warfare, temporary fortifications ought to play a principal part and may be made to do so. In other terms, that an army ought to be able to fortify itself everywhere, and take advantage of every position. The defensive system of a district ought to be studied, in view of various contingencies, and temporary fortifications rendered easy, prompt, and efficacious in order to defeat the combinations studied beforehand by the enemy, to reduce him in certain cases to the defensive, when he was hoping to attack, and to embarrass his movements on the great scale, by unforeseen resistance at a point which he expected to pass with ease, and oblige him incessantly to modify his plans by rapidly executed arrangements for defence. (" Annals of a Fortress," p. 380.)

To be able to entrench themselves, and thus reap the enormous advantage gained by the skilful use of fortifications in the field, armies must be supplied with tools. Almost all competent

authorities have long since decided that for this purpose, to ensure that the tool shall be forthcoming at the right time and place, tools must be carried on the soldier's person. This is now done in most European armies except the British, which has not yet made up its mind what pattern to adopt, or how to carry what is ultimately adopted. The tools carried in South Africa were ridiculous, and were thrown away.

The Strategic Value of Fortified Places.

The earliest dawn of history discloses fortification as holding an important position in the Art of War. Every nation has made use of it, every great commander has availed himself of it, every military writer has treated of it and descanted on its importance.

Under such circumstances it might have been supposed that the importance of fortifying important points might be assumed as a universally acknowledged fact. It has become the fashion in some quarters, however, of late years, to depreciate the value of fortresses, and to speak as if the result of recent campaigns had been to demonstrate their inutility and even their evil effect.

This opinion can only be held by those who have given these campaigns the most superficial study, and is not in accord with the views of the most distinguished soldiers, either ancient or modern.

Napoleon gave as his opinion: "Strong places are useful both in offensive and defensive war. Doubtless they cannot of themselves hold back an army; but they are an excellent means of delaying, embarrassing, weakening, and disquieting a victorious enemy."

Jomini writes: "If it be rare that a fortified place of itself absolutely prevents the progress of an army, it is, nevertheless, an embarrassment, and compels the army to detach a part of its force or to make detours in its march; while, on the other hand, it imparts corresponding advantages to the army which holds it, covers his depôts, flanks, and movements, and, finally, is a refuge in case of need."

Clausewitz says: "Fortified places are the first and most important supports of the defence. An army on the defensive, deprived of fortresses, presents a hundred vulnerable points—it is a body without armour."

Guibert writes: "Without fortified places, the effects of war would be more devastating, the interior of a State would run greater risks."

The Archduke Charles gives indirect testimony in their favour thus:—"The siege of a fortress deprives the army which undertakes it and that which covers it of an important fraction of their troops, and should only be undertaken when there is a great disproportion between our forces and those of the enemy."

Sir Edward Hamley writes: "Fortresses, properly distributed, might exercise a most potent influence. . . . In our own day we have seen a small fortress change the aspect of a great war; for had Silistria failed to repel the Russian Army, Turkey, not the Crimea, would have been the scene of the campaign. . . . Fortresses properly placed will confer advantages that vastly more than compensate for the extent to which they tax the resources of a State." (See the importance of Kars 1854 and 1877.)

While the value of fortified places is undoubted when well placed, properly constructed, and used on correct principles, it is equally undoubted that under other circumstances their influence may be prejudicial and even disastrous.

"While fortified places are essential supports, abuse in their application may, by dividing an army, weaken it instead of adding to its efficiency." (Jomini, p. 151.)

"As fortresses properly located favour military operations, in the same degree those which are unfortunately placed are disadvantageous. They are an incubus upon the army which is compelled to garrison them, and the State whose men and money are wasted upon them." (Jomini, p. 148.)

"Large fortified places which are not in proper strategic positions are a positive misfortune for both the army and the State."

Sir Edward Hamley says: "Fortified places are great drains on the resources of a country. They are expensive to construct and expensive to maintain. A few of them will swallow up, for

their necessary garrisons, armies that might turn the scale of a great war in the open field."

Colonel Von Scherff writes: "Permanent fortifications will always, and in any case, have serious drawbacks—they exercise a prejudicial effect on the conduct of the operations, they enfeeble the army in the field, they trammel, they paralyse the commander's liberty of action; nevertheless, they have an undoubted value." ("Rev. Mil.," 1879.)

Under these circumstances, it is evidently of the utmost importance that the principles governing the correct use of fortification for the defence of States should be clearly understood, in order that full value may be obtained from it, and the evil influences resulting from its misuse be avoided.

The development of agriculture, commerce, and industry has, in most modern countries, brought about the construction of so many roads, canals, and railways, that many points formerly of strategic importance have ceased to be so. Most fortresses which formerly intercepted the communications of one country with another can now be turned with ease.

Thus Charleroi was in 1815 a place of strategic importance, as commanding the only bridge over the Sambre from the French frontier to Namur; but now that fourteen bridges span this river between Namur and Charleroi, the latter has lost its strategic value. The same is the case with nearly all the fortresses on the Franco-Belgian frontier.

The construction of railways, with their incomparably greater speed and capacity for transit and supply, have greatly modified the relative strategic importance of places, and have caused many points before unimportant to have strategic value.

Fortresses assume their greatest value when the belligerents are nearly equal in strength. When invading armies are so vastly superior to those defending a country that they can afford to leave detachments to mask all the fortresses, and still march on their principal objective, fortresses will not forbid the invasion; nevertheless, if well placed at strategic points, they will delay it, by denying to the invader the use

of the roads, railways, bridges, &c., they command, and if the invader is defeated they will increase his disaster.

"Metz arrested the whole power of Charles V., and Lille for a whole year delayed Eugene and Marlborough. Strasburg on many occasions proved the security of French armies. During the invasions of France in 1814 and 1815, these places were passed without being besieged by the invading forces, because all Europe was in arms against France; but one hundred and fifty thousand Germans having in their front one hundred thousand French could not penetrate to the Seine with impunity, leaving behind them these well fortified points." (Jomini, p. 150.)

The greatly superior forces of the Germans in 1870 enabled them to invest Metz, besiege Strasburg, Toul, and many other places, and still march on Paris and invest it; and ultimately these places fell into their hands. It requires but a slight study of this war to prove that had the French fortresses been well prepared and obstinately defended, the resources even of Germany would have been strained to the utmost, and the result of the war might have been very different.

If the fortified places in France in 1870 did not render the services which the country had a right to expect, one of the main reasons for this was that they had not been constructed to resist modern artillery, and could not prevent the bombardment of the towns they covered, from a distance. Even at Metz the outer forts were quite incomplete at the outbreak of war, and those of Paris, on the south side, were far too close to the city to afford it proper protection, besides being themselves completely commanded at comparatively short ranges. Yet Paris held out four months.

Places formerly deemed strong, such as Toul and Montmédy, were easily commanded by the German guns, from heights formerly out of range, and were consequently untenable. For the same reason fortified towns which were formerly safe from bombardment, while their outworks were held, were liable to destruction while the defences were still

unbreached. Peronne, Thionville, and Mézières were examples of this.

The Generals who let themselves be shut up in Metz, Paris, and in Plevna committed faults which ought to be attributed to them only, and not to fortification. The garrison of these intrenched camps could, and ought to have been smaller; the resistance would have been prolonged in a direct ratio, and the surplus troops could have manœuvred in the open field. In spite of all the tactical faults committed, it was the resistance of Paris and Metz alone in 1870 which, by rendering immobile almost the whole German force, enabled the provincial armies to be formed and to continue the war. In the same manner, without Plevna, the Russians would have arrived at Constantinople much sooner. (Bornecque, p. 373.)

M. Viollet-le-Duc thus writes of the policy which left the French fortresses unprepared:

"War is a game which tends to become more and more costly; but at the present day, as in times past, that which costs most is defeat.

"With forty million francs well laid out in France before the war in 1870, and from forty to eighty millions spent in the war itself, we probably should not have had to pay the four hundred millions which this war cost us, and we should not have lost two provinces which are certainly worth still more than that sum."

He truly says, with reference to France, what should be taken to heart by other countries, including our own:

"*Parsimony in military preparations, in times of serious change, such as ours, is ruinous.*"

Chatham said: "In war expense is true economy."

The principle to be followed may be summed up as follows:— Commit yourself to no superfluous outlay, but spend all that is necessary.

The Nature of the Strategic Influence of Fortresses.

The effect exercised by a fortified place is evidently composed of two distinct parts, namely, internal or defensive, and external or offensive action.

The first serves to protect the place and all that it contains, the second exercises a certain exterior influence over the country situated beyond the range of its cannon.

This exterior action consists in the attacks directed by the garrison against an enemy approaching within a certain distance of the place. The stronger the garrison in numbers, the stronger will be the detachments it can send on such expeditions. It follows from this that the offensive action of a large fortress is not only more formidable to the enemy, but also more extended than that of small places.

The exterior action of a fortified place may be itself divided into two elements; the one comprising the external action of the garrison proper; the other consisting of enterprises made by other bodies of troops, more or less large, not part of the garrison, but in communication with it.

By such means, bodies too weak to hold their own against the enemy in the open field, may, thanks to the protection afforded them by the works of the place in case of need, maintain themselves in the country, and even remain masters of it up to a certain period. (Clausewitz.)

Defensive.

Fortified places are the first and most important supports for the defence, and act as such in the following manner:—

1. As safe magazines or depôts of supply.

The assailant must supply himself from day to day during his advance; the defender, on the contrary, should be ready long beforehand. An army on the defensive, deprived of fortresses, presents a hundred vulnerable points—it is a body without armour.

2. As protecting rich and populous cities.

This function is intimately connected with the first, as great and wealthy cities, and, above all, commercial cities, are the natural magazines of armies.

The capital of a country especially needs protection. It is usually the city of the greatest importance in wealth and commerce, and being also the seat of government, its capture is likely to paralyse the action of the defence. But there are many exceptions.

3. As barriers.

When situated, as they should be, at points of great strategic importance, they bar the use of the rivers, roads, and railways by the enemy.

4. As points of tactical support.

As the zone swept by the fire of all but the smallest places is several miles in diameter, and the offensive action of the place stretches beyond this, fortified places may be considered as the best points of support for the flanks of a position. The ground occupied need never extend actually up to the place, as the assailant will certainly not venture to pierce the interval, and so expose his line of retreat.

5. As stations on the line of communications.

When strong places are situated on the line of the defender's communications, which should frequently occur, they form convenient stations for all that comes and goes on this line.

6. As a refuge for bodies of troops when overpowered or beaten.

Under the guns of a fortress which is not too small, every body of troops is sheltered from the enemy, especially when there exists an intrenched camp for the purpose of keeping the enemy at a distance.

Clausewitz writes of this: "It is only during war that are acquired, by direct experience, true notions of the salutary influences exercised by the neighbourhood of a strong place when circumstances are unfavourable. It contains powder and arms, hay and bread, provides shelter for the sick, safety for the sound, and time of reflection for the frightened. Strong places are hostelries in the desert."

The experience of the Franco-German War shows, however, that the retirement of an army on a fortress in the face of a

greatly superior force may lead to the investment and subsequent surrender of both, without having exerted their due influence on the campaign. When a beaten army is driven back on a fortress, it should not be allowed to enter the place itself, nor to interfere in any way with its defence, but merely to rest and rally under the shelter of the guns of its forts.

7. To prevent the complete occupation of territory by an invader, and to afford support to its defence by popular levies and irregular troops.

General de Blois, expanding the conception of Rogniat, advocates the provision of fortified places at central points in all provinces liable to invasion. Such places should be constructed at important railway junctions and be surrounded with a circle of detached forts, some three miles from its salients.* In the immense space thus covered would collect, when war was declared, the whole population of the district fit to bear arms. These would take part in the defence of the fortresses, and might, as they became sufficiently trained, send reinforcements to the armies in the field.

It is on some such principle as this that the great cities and commercial harbours of the British Empire must be defended. The volunteers, naval and military, form an excellent nucleus for the garrisons, but it must not be left until the declaration of war to provide the necessary works, nor to plan the organisation of the defence down to the minutest detail. It must never be forgotten that peace is the time for preparation, war for execution.

Defence of States by Fortresses.

For this purpose fortified places serve two principal strategic purposes: first, to cover the frontiers of a country; secondly, to aid the operations of a campaign.

The strong places on a frontier break the torrent of the attack. The enemy is obliged to invest them, and if the garrison show a good face, twice their number must be employed for this, while the delay gives invaluable aid to the defender.

* A much greater distance would now be desirable.—The Editor.

The fortification of strategic points prevents or delays their occupation by the enemy, shuts him out from the main sources of supply, and bars access to the main routes of communication; while to the possessor they act as points of support, protect his depôts and communications, and afford him a refuge when overpowered or beaten.

The problem of the defence of frontiers is a varying one.

When a country is covered with great natural obstacles, presenting few accessible points, and these admitting of defence by fortifications, the problem is simple; in open countries it is more difficult.

Every one will understand that the system of defence proper for Switzerland, a country of mountains, cannot resemble that proper to Holland, a country of plains, cut up with streams and canals. In a mountainous country, a small fort, armed with a few guns and defended by skilful marksmen, may stop an entire army, while in the plains, accessible in all directions, the most powerful fortresses have need of the support of an army, to enable them to be held, after the trenches have been opened against them for some short time. (Chazal, Savoye, p. 661.)

The system of fortification adopted by a State should be founded on the military forces at its disposal. Fortresses which require for their defence a large proportion of the troops available for service in the field, and of which several are necessary to cover the frontier, cannot be otherwise than dangerous to a State which has to depend on itself alone to resist an invader.

There are cases, however, of weak States, such as Holland and Belgium, whose existence depends upon treaties; or of so-called "buffer" States, such as it is proposed to make Afghanistan, which depend for their ultimate defence on the assistance afforded by more powerful allies. With these the point of most importance in case of invasion is to gain time to allow succour to arrive. In such countries the bulk of the forces are better employed in occupying fortresses, defending the strategic points of most importance through-

out the country, such as the capital, arsenals, depôts, and chief places on the lines of communication, than in seeking vainly in the field to cope with the superior forces of the invader.

The principles laid down by Sir Edward Hamley for the defence of a country by fortresses are as follows:—

1. The nature of the frontier must be considered—whether difficult of access and easily closed by small works, or open. If open, a large fortress and intrenched camp, at such a distance from the frontier as will admit of an army manœuvring in front of it, yet close enough to form a base for operations in the enemy's country, will be of great value. If, however, the frontier be a great river, the fortress may appropriately be situated on it.
2. When the distance between the frontier line and the capital is great, a second defensive line should be formed. It should consist of intrenched camps, situated on possible great lines of operations, at such points as will combine the advantages of easy communication (by railway if possible) with each other, and with the capital; of being at suitable intermediate distance between the capital and the frontier, and of offering facilities for defence.

   The capital (or if it be too near the frontier, some central place of importance) should be fortified.

In this way the most considerable frontier and line of invasion might be secured by two or three fortresses and intrenched camps, with a few inferior works to obstruct particular defiles or to secure passages of inter-communication.

General Brialmont's recommendations are as follows:

1. To occupy the principal defiles, such as mountain passes, junctions, and valleys; roads traversing a marsh or forests; as well as bridges able to assist the operations of the defensive army on both banks of an important stream.
2. To fortify great harbours, points of disembarkation, and the principal roadsteads.

3. To construct, at the limit of each zone of invasion, a place to serve as a depôt and base of operations for the army when acting beyond the frontiers. (Lille, Metz, and Strasburg, are places of this description; their object was to support the operations of French armies in Belgium, the Ardennes, and Germany. The two latter will now serve the same end for German armies in France.)

4. Behind the places occupying the defiles, to construct in each zone a great place of refuge occupying a strategic point of the first order.

   According to this principle, France should have a great place of refuge, *Soissons*, in rear of the north front; another, *Langres*, in rear of the north-east front; a third, *Lyons*, in rear of the east front; and a fourth, *Auch*, in rear of the secondary front of the Pyrenees.

   For countries having command of the sea, as Great Britain, or small countries expecting aid by sea in case of war, as Belgium, a place resting on the sea is preferable to any other.

5. In the centre of the country to construct a great fortified position to act as a keep for the defence.

   In small States this position will generally be sufficiently near to the frontier to serve as a place of refuge, whichever zone is invaded, in which case a special place of refuge for each zone of invasion may be dispensed with. When the capital is not too near to one of the accessible frontiers to act as the central keep, this point should be chosen for it in preference to any other.

Fortification of Frontiers.

Defence of Difficult Frontier.

When the points by which a frontier may be penetrated are few, these places should be occupied by strong places,

which, under such circumstances, become of immense importance, obstructing the invader until the defensive army takes up its position.

Where the obstacle is a great river, the fortification of the points where it is bridged will greatly delay the operations of the enemy, and if these fortified places are large, with strong garrisons, an invader will be compelled to capture them or to invest them with a greatly superior force before he can venture on any considerable step in advance.

Where the points of ingress on a frontier are lessened in number and made difficult by the presence of a range of mountains, the principal passes, including of course railway tunnels, should be secured by forts, and the principal strategic points in rear should be held by large fortresses, capable of acting as pivots of manœuvre for the defending army.

In 1812 the French held Ciudad Rodrigo and Badajoz, fortresses commanding the only good roads between Spain and Portugal, the one fortress affording a base to Marmont, the other to Soult, in offensive operations against Lisbon.

If Wellington, masking Badajos, were to take the offensive against Soult in Andalusia, Marmont from Ciudad Rodrigo would in a moment recall him by threatening Lisbon; and Soult would in the same way, from Badajoz, prevent an attack on Marmont.

The French, living on the country amid a hostile population, could only take the field when the harvest had filled their depôts of supply. Wellington, based on the sea, was more independent, and could take the offensive, were it not for these fortresses, when it was most inconvenient to the French. Hence their great importance, and the determination of Wellington to take them at any cost.

Defence of Open Frontiers.

When a frontier is open, and without natural obstacles, the fortresses defending it must be placed at the principal

strategic points, such as on rivers, at the confluence of rivers, the junctions of roads and railways.

"It would seem that the Art of War nowadays, as far as resistance to an invader is concerned, consists not in endeavouring to defend any extensive lines which may be taken or outflanked, but in establishing a small number of centres of defence, sufficiently remote from each other and connected by a system of railways in the rear, which are capable of holding out long, and which compel the enemy either to divide in order to watch them or to take them, to expose his flanks to an attack if he leaves them alone, or to see himself cut off from his base of operations if he advances *en masse* against one of them without covering himself against the others." (Viollet-le-Dut, p. 376.)

Fortresses should be Few and Powerful.

When the topography of a frontier is open, there should be no attempt to make a complete line of defence by building too many fortresses, requiring armies to garrison them, and which might, after all, not prevent an enemy from penetrating between them. It is much wiser to build fewer works, and to have them properly located, not with the expectation of absolutely preventing the ingress of the enemy, but to multiply the impediments to his progress, and, at the same time, to support the movements of the army which is to repel him. (Jomini, p. 148.)

Sir Edward Hamley recommends a very few strong places, situated on the most direct lines to the capital, compelling an invader to make a great circuit, or to diminish his fighting force considerably, in order to pass them, while the garrisons drawn from the defensive army are reduced to a minimum.

Jomini discusses the defence of the French frontier and the errors of the system on which it had been fortified under Louis XIV., no less than forty fortresses existing on one-third of her frontier. A system carried out by the minister Louvois in opposition to Vauban. He recommends that the fortified places

on each front to be protected should be in echelon on three lines, and should extend from the frontiers towards the capital. There should be three in the first line, as many in the second, and a large place in the third, near the centre of the State. (Jomini, p. 149.)

Marshal Marmont, discussing the same question, considers that one great place on each frontier would suffice—for example, Lille for the Belgian frontier, Metz for that of the Ardennes, Strasburg for that of the Rhine. He thinks, however, that these should be not fortresses only, but great arsenals, depôts of supply, and reserves for an army, so that an army might manœuvre round such a place either in its own or the enemy's country, secure of all the support which a near base can afford.

General Brialmont considers that on each principal line of invasion there should be two or three good fortresses, in one of which the entire army can take refuge without losing the power of resuming the offensive when circumstances are favourable.

General Brialmont exposes the error of the opinion held by many French and other engineers at the beginning of this century, as to the value and even necessity of a multiplicity of fortresses to defend a country. Pierron agrees on this point.

Even as late as 1859, General Noizet, author of a text-book on fortification greatly used, advocated that all towns of any importance should be fortified, and that in some cases, and in certain countries, there should be four or five lines of fortified places on the frontier. In 1848 it was stated that of 715 fortresses in the whole of Europe, no less than 199 were in France, Russia being next in number with 86.

Vauban, whose great name was quoted to support these theories, was in reality decidedly opposed to the multiplication of fortified places, and in this respect differed from both Louis XIV. and his minister Louvois. Writing to Catinat in 1687, he says: "You are right in saying that too many fortified places in France is an evil which will only be perceived when there will be as much need to attack as to defend them; I agree strongly with you, and if a great war comes, it is much to be feared that the first campaign will show it."

Again in a memorandum presented to Louis XIV. in 1696, six years before his death, he wrote: "We are reduced to the defensive, not being able to maintain several large armies in the field, and at the same time to defend such a great number of places; besides this they only deny to the enemy the ground they occupy, are heavy masses which do not move, and require as many good qualities in each of their governors as in a good General of an army. Whilst a powerful army, mobile, capable of acting in any direction, requires five or six good Generals, one hundred good governors of places are required to resist armies which will pass by without besieging them."

Vauban, justified in his fears by the succeeding war, proposed that twenty-three fortresses, mostly in the north of France, should be suppressed.

Nevertheless, in 1859 there existed 140 fortified places in France, forty-six being great fortresses, a fact which probably had much to do with the unprepared state and unreformed condition in which they were almost all found in 1870.

As Napoleon had said: "It is with fortified places as with positions for troops. Do you attempt to defend a frontier with a cordon? You are weak everywhere, for everything human has a limit. Artillery, money, good officers, good generals, none of these are infinite, and if you are obliged to scatter everywhere, you will be strong nowhere."

Belgium, a small country, whose military policy must necessarily be defensive, wisely reduced the number of her fortified places, and concentrated her defence in a great intrenched camp at Antwerp.

General Brialmont, writing in 1863, said:

"In all other countries, above all in France and Holland, they continue to occupy and maintain a crowd of places, which, at the moment of danger, will be an embarrassment and cause of weakness in the opinion of the most enlightened judges in these countries, who, unfortunately, cannot carry their ideas in the face of old theories and ancient prejudice."

The means of avoiding the evils of over-fortification is the adoption of a simple and concentrated system of defence, based on strategic principles and on the means of rapid concentration supplied by railways, telegraphs, and steamboats.

It is evident, says Captain Bornecque, that in preparing the theatre of war, fortification should strive more than ever to draw as few combatants as possible from the army in the field, and consequently to restrict the number of points to fortify, while giving them greater intrinsic force. ("Fortification, Guerre d'Orient." p. 369.)

Where Fortresses should be situated.

Fortresses should always occupy important strategic positions. Such points must be from their nature of great strategic value; by fortifying them their seizure by the enemy is prevented, and they will act as valuable points of support to the army they belong to.

Those strategic points which it is of most importance to fortify are: The capital of the State; the great arsenals and depôts of supply; towns situated on great rivers, in which case the fortifications should command both banks, places situated at the confluence of two great rivers being of increased importance.

Other points where important communications converge, such as railway junctions.

The entrance and exit of tunnels on important railways should certainly be protected by small works, railway tunnels being frequently of great strategic importance owing to the ease with which they may be destroyed and the communication stopped.

By placing fortresses on natural obstacles, and at the junction of many great roads, their strength is increased and the command of important strategical points secured.

In no situation can a fortified place fulfil so many functions as when it is situated on a great river, at points where the main communications cross; such places not only command both banks and open numerous opportunities for attacking an enemy who attempts to pass the obstacle, but are also difficult to invest, since the power of the besieging army to do so depends on the possession of bridges both above and below it, a means of communication which floods and other casualties make especially precarious. Fortresses situated at the con-

fluence of two rivers, such as Mainz, Coblentz, and Metz, are even better situated for defence.

Fortresses on a river should be placed astride the stream, commanding both banks, and the line of works should include all the bridges over the stream in the neighbourhood.

The fulfilment of these conditions may sometimes be rendered difficult by the nature of the surrounding country, should high ground too distant to include within the line of forts be within range.

Such positions, when of great importance, must be secured by the occupation of the commanding ground by a detached work.

Donauwerth, on the Danube, is said to be an example of this, the actual defences of the river crossing having to be themselves protected by a fortress on adjoining high ground commanding the river.

At Metz the forts in the outer line are themselves large works, occupying high ground far distant from the river.

A fortress astride a river must not only have sufficient bridges within its circumference to ensure easy crossing of the river, which should thus cease to be an obstacle for the force occupying it; but the communications through the town connected with the bridges must be wide and convenient for the movement of troops.

At Metz the want of sufficient bridge accommodation and the narrow roads through the city greatly hampered the movements of the French in 1870, and was much complained of by Marshal Bazaine.

The Size of Fortresses.

Wherever fortresses are situated they should be large, capable of containing magazines, arsenals, the depôts of an army; they should be fortified so as to receive large garrisons, or the *débris* of armies, and yet, at need, to be defensible with few troops. Before such fortresses an army can act offensively, with the certainty of finding support there in case of check, or it may leave them to themselves until favourable circumstances enable the besieging enemy to be attacked.

Large fortresses, such as are above described, capable of containing considerable garrisons and supplies, which not only protect a country, but may also, should fortune be favourable, assist the defender to pass from the defensive to the offensive, cannot be passed by an invader without besieging or investing them, nor can the principal army make any important step in advance until they are captured.

The case of Metz, in 1870, has sometimes been referred to as an illustration of the evil influence of fortresses, the large army of Marshal Bazaine having been reduced to comparative impotence within the line of its defences. This result cannot, however, be attributed to the existence of the fortress, but rather to entire misapprehension of its proper function. Had Marshal Bazaine retired with his army towards Paris, to effect a junction with MacMahon, leaving in Metz only sufficient troops to properly conduct its defence, this fortress would have been enabled to fulfil its proper *rôle*, hampering the German communications and compelling the detachment of a force before it greatly superior to its garrison, while its defence could have been more efficiently conducted and longer sustained.

When the population can be relied on to aid in their defence, it is better that the fortifications of fortresses should enclose populous and commercial cities. Such places are natural depôts of supplies, and the aid furnished by the citizens will lessen the numbers of the garrison necessary for their defence. This is especially the case in countries, such as England, where the loyalty and courage of the civil population is undoubted.

While large places are much the most advantageous among a friendly people, smaller works are not without importance, not to arrest the enemy, who might mask them, but to aid the operations of the army in the field.

In a mountainous country, small, well-located forts may be equal in value to large fortified places. In such a situation as a small mountain pass, the latter would be difficult to provision and supply, the issues could be easily blocked by numbers less

than the garrison, while the invading army turned the place. The province of forts at such points is to close the passes, and not to afford refuge to armies; their size need, therefore, be but small.

A small fortress which does not command an entrance into a country is of but small value, for it can be observed or blockaded by a weak detachment.

From the above it may be assumed that the only kinds of fortified places which are of effective use under modern conditions of civilised warfare, are large intrenched camps, such as Metz, Portsmouth, Plymouth, &c., and forts closing important lines of communication.

To be effective to resist attack, fortified towns must now be surrounded, at a distance of at least 4000 yards, by a line of detached forts on commanding ground.

M. Viollet le Duc recommends that these detached works at 4000 yards' range should form an interior line, consisting of permanent works, strengthened in case of war by field works, and that an exterior zone should be formed by occupying strategic points, well chosen and considered beforehand, at a distance of some 8000 yards from the place, forming small camps protected by temporary works, and affording security to a numerous army.

Every centre to be defended should therefore possess works sufficient to prevent a surprise; in addition to these, at a distance of 6000 or 8000 yards,* there should be a line of forts, crossing their fires if possible, or at any rate connected by strong batteries; and lastly, at a distance of about 4000 yards in advance, there should be positions previously examined suitable for simple works of field fortification, which may offer a resistance sufficient to permit movements by the enemy on a grand scale and delay the formation of his batteries.

Control of Large Cities.

In States recently conquered, the great centres of population, always liable to revolt, must be occupied. To keep such

* Consider the range of the most modern guns.—EDITOR.

towns in order, a citadel or fort established in the vicinity will almost always suffice. If they were entirely surrounded with defensive works, they would require a strong garrison, and there would be much trouble in retaking them if insurgents succeeded in capturing them by a *coup-de-main*.

Many towns in India are thus kept in restraint.

The Russians keep such towns as Khiva, Samarcand, and Taskkent, in Central Asia, in order in the same manner.

The Fortification of Capitals.

The seat of government and of the administration, the centre of business and of political influence, is always an important strategic point, and almost always a decisive strategic point.

The invasions which marked the wars of the French Republic and of the Empire prove as a fact that the fall of capitals has generally resulted in paralysing all the resources of the defence.

General Brialmont points out that the only States which have not made peace when their capitals have been taken, are either those in which a strong provincial organisation has left a large share of prestige and influence to certain towns, and those who are formed of a union of several peoples of different race and nationality, which have not yet reached a state of strong centralisation.

To the first category belongs Spain, who does not value Madrid more than Cadiz, Saragossa, or Barcelona; and in the second Austria may be placed, composed of heterogeneous States having each its own capital, to the possession of which they attach more importance than to that of Vienna.

All such States, however, tend to become more centralised by the action of modern ideas and institutions. The taste for pleasure and luxury, the improvement in the general well-being, the greater uniformity of institutions, wider ideas and greater community of sentiment, the multiplication of means of transport,

the rapidity and ease of travelling, the concentration of political, commercial, industrial, and financial activity, in general, to the centre of government; all these particular or general circumstances produce a very marked movement of persons and things from the circumference to the centre—in other words, from abroad and from the provinces towards the capital. (Brialmont's "Defence," p. 15.)

The defence of the capital of a country by fortifications is a measure of the greatest possible importance.*

Such a city regulates or greatly influences the public opinion of the nation, contains abundant resources of every kind, the loss of which may greatly paralyse the defence of the country, which will, to the minds of a large portion of the people, be no longer possible when the heart of the State has been reached. The moral effect produced in discouraging the people by the capture of the capital is alone sufficient to attach enormous importance to its security.

The fortification of capitals assures to armies a point of interior support, together with material resources and moral advantages, of great importance.

The knowledge that the capital is safe from sudden capture gives the defending armies free play, enabling them to dispute the territory on the frontier, to manœuvre in any direction, concentrating on the frontier defences, or on one of the centres of interior defence. They can multiply their combinations and movements, and engage in action without compromising the fate of the State. They are always sure of finding under the guns of the capital a last refuge, a support, with depôts of every kind. Vast combinations are thus possible, the strategic field being clear, and during a shorter or longer period the defensive army can act at a distance, and not concern itself with the capital. (General Pelet, as quoted by Brialmont, p. 16.)

"The fortifications of Paris," wrote Marshal Marmont, "assure

* I suggest a careful study of Clarke's works, Pierron's works, Mahan's works, and May's "Imperial Defence." We must not be paralysed by walls. Men, and not towns or mountains, are the defence of nations.—EDITOR.

more powerfully the independence of France against the attacks of all Europe than the acquisition of many provinces, which would only so much the more extend the frontier."

The possession of Genoa, Turin, Alexandria (Italy), Milan, &c., in 1796, both from their political and military importance, had a decided influence upon the results of the war in these several States. In the same way Venice, Rome, and Naples in 1797, Vienna in 1805 and 1809, Berlin in 1806, Madrid in 1808, and Paris in 1814, 1815, and 1870.

Sir Edward Hamley says: "The student of the campaign of 1814 will perceive what vast additional power of manœuvring Napoleon would have gained had Paris been secure from assault. No longer recalled by the fears of the people, or by political exigencies, to interpose directly for its defence, all his strokes would have been delivered in the most decisive way; and the nearer the allied armies approached the capital, the more imminent would be the risk they ran of a fatal disaster."

In 1870 the prolonged resistance of France would have been impossible had not Paris been fortified. Its siege occupied the German armies while fresh levies were raised in the provinces.

Napoleon said:—

"More than once had I thought of fortifying the heights of Paris; but the multiplicity of other engagements, and fear of exciting popular alarm, had prevented its execution. . . . The capital of a country contains the *élite* of the nation; it is the centre of public opinion, and the depôt of all its wealth and strength; to leave such an important point without defences is national folly. . . . Paris has many times owed its safety to its walls; if, in 1814, it had been capable of resisting only eight days, what a change might it not have produced in the affairs of the world! If, in 1805, Vienna had been well armed and better defended, the battle of Ulm would not have decided the war—the battle of Austerlitz would never have taken place. If, in 1806, Berlin had been fortified, the army beaten at Jena would have rallied there, and have been rejoined by the Russian army. If, in 1808, Madrid had been fortified, the French armies, after the victories of Espinosa, Tudela, Burgos, and Sommo-Sierra, would never have ventured to march on that capital, with the English and Spanish armies at Salamanca and Valladolid. Finally, the

fortifications of Vienna twice saved Europe from the Mussulman sabre."

It is certain, therefore, that fortified capitals not only give independence to the defending armies, but increase the value of the frontier fortresses and fortified positions covering the capitals.

These advantages are especially marked when the capital occupies a point of great strategic importance—that is to say, favourable to the arrival of help, offering natural obstacles easily defended, accessible at some points only, in free communication either with the sea or with a neighbouring State which can be relied on for support, easy to provision, possessing at all times great resources in provisions and material, and impossible to invest without a deployment of extraordinary strength.

The conditions making the fortification of a capital desirable all exist to the greatest extent possible as regards London, and every argument for the fortification of capitals in general holds with still greater force in the case of this enormous metropolis.*

The fortification of London has for many years been ably advocated by Generals Collinson, Sir Charles Nugent, Sir Edward Hamley, and other distinguished officers; and its absolute necessity for the safety of the Empire, should Britain have, in the future, as she has had frequently in the past, to hold her own against a combination of powerful hostile States, is acknowledged by every military authority. Notwithstanding this, it is feared that but little has been done towards this most necessary service, nor does it appear likely to be taken up seriously until the nation has been rudely awakened from its present state of lethargy.

When Capitals Should Not be Fortified.

There are some circumstances, however, under which it may be undesirable that the capital should be fortified.

* But all this scheme involves a thorough examination of our sea power, of food supply in war time, and other great issues. I cannot follow our authority on this point without many reservations.—THE EDITOR.

When the capital is very near a threatened frontier, access to it not being prevented by any natural obstacle; when the country is small and a better strategic point exists in rear of it, the seat of government should not be fortified.

It would serve no end, in fact, to surround with fortifications a capital exposed to be invested at the outset of hostilities, and in which, in consequence, the troops, provisions, and supplies of all sorts necessary for a prolonged defence cannot be brought together in time. (Brialmont's "Defence," p. 15.)

When, for some such reason, a strategic point of great importance is fortified as a central redoubt in place of the capital, as, for example, Antwerp for Belgium, Carlsborg for Sweden, Amsterdam for Holland, every endeavour must be made beforehand to avoid the fall of the capital producing a disastrous effect. Public opinion must be warned that the retreat of the Government and of the army on the *military capital* of the country is a manœuvre and not a fight. In such case the defence could continue with the support of all the active forces in the country, as it continued in Prussia under the reign of Frederick the Great after the taking of Berlin; and in Spain, during the wars of the Empire, after the taking of Madrid. (Brialmont's "Defence," p. 36.)

Pierron deplores the fortification of Paris and Lyons. He would prefer a line Nevers to Besançon or Orleans.

Population of Capitals.

In considering whether, in any particular instance, it is desirable to fortify a capital city, the nature of the population of the city must be taken into account.

It is the more desirable to crush an invader before he reaches the capital, because capitals, from their heterogeneous population and the political intrigues of which they are the centre, are generally in less favourable conditions than other towns to support the privations and dangers entailed by a long defence (Brialmont, p. 35). The example of Paris is

not likely to be followed; in this case the populace was enraged at the capitulation, in spite of their sufferings.

To support this view Brialmont quotes Madrid in 1808 as showing much less energy than Saragossa, Valentia, Tarragona, Cadiz, &c.

Also Lisbon, which about the same time opened its gates to 25,000 French, commanded by Junot; while Oporto, two years afterwards, organised notable means of defence against Soult's army, charged to reconquer Portugal.

Vienna, again, in 1809, might have defended itself for some time and given great embarrassment to the French army; but delivered itself up after a mere feeble demonstration. The Archduke Charles says that if Linz had been fortified Vienna could not have been taken.

Paris, both in 1814 and 1815, showed a feeling so hostile to the Emperor that if the French army had carried on an energetic defence under its walls the example of the falling off and treason of the population would doubtless have had an ill-effect on the *morale* of the troops and have precipitated the castastrophe.

Intrenched Camps, Strategic Pivots, or Fortresses of Manœuvre.

Places organised in such manner as to receive the whole defending army; where it can live, re-organise itself, and keep in check superior forces of the enemy during a considerable time, while preparing for offensive war, are called *great strategic pivots.*

The sites of such points are generally designated by nature, by the direction of the great routes of communication, the configuration of the frontier, and other circumstances noted by the strategist and tactician. When several points satisfy the conditions of the problem, those will be preferred which offer most facility for subsistence, for the reorganisation of the personnel and of matériel, the arrival of reinforcements, &c.

Such places may either be fortresses, such as are Paris, Metz, Strasburg, Belfort, Portsmouth, and many others, the works being entirely permanent or arranged so as to be quickly completed in case of need by the addition of tem-

porary works, or to be constructed during the course of a campaign as strategic events may dictate, such as was Plevna.

Intrenched camps, serving as a refuge, point of support, and base of operations to an army in the field, are of comparatively modern institution.

Bousmard states that they were commonly supposed to have been copied from the Turks, who had constructed them from a remote period, under the name of palankas. In the time of our Queen Elizabeth the Turks were the masters of the Art of War.

In 1693 Vauban traced the outline of an intrenched camp at Dunkirk, which was constructed in the following year. In a letter written by him he gives the object he expected it to fulfil: "This camp once finished and guarded by a body of troops of no great strength, no army of 100,000 men could so invest Dunkirk as to prevent the arrival of succour."

The generals of Louis XIV. seem to have disliked Vauban's idea, and to have advised against its adoption. Nevertheless, it was carried out at Thionville, Ath, Namur, Lauterbourg, and other places.

In 1697 Barcelona, by means of the intrenched camps of Mont-Jouy and of La Biaillière, resisted the Duke of Vendome for two months.

In 1707 Toulon was defended by the army of Marshal de Tessé, established in three intrenched camps, constructed hastily under the walls of the place. After vainly endeavouring to capture these camps for twenty-six days, Prince Eugène and the Duke of Savoy, in spite of the large force at their disposal, had to retreat. At this time the place was not even finished. Without the camps it would have been taken at the first assault.

The intrenched camps of Vauban were to be constructed in time of war, and to form a continued line of works of mixed fortification. The parapets had a command of 9 to 11 feet, with ditches 10 to 12 feet deep and 30 to 36 feet wide. A sloping palisade was on the berm, and the entrances and sally-ports were provided with bridges and barriers. In some cases a glacis and covered way was provided.

LINES OF TORRES VEDRAS.

DESCRIPTION.—These famous lines, situated on the p formed by the River Tagus and the Sea, consisted of three ranges of defence covering both the City of Lisbon and the port of embarkation of the British Army.

The first, 29 miles long, extended from Alhandra on the T the mouth of the Zizandre River.

The second, from 6 to 10 miles in rear, ran from the Tagu Sierra Serves to the mouth of the Lorenza River, being 24 length.

The third, at the mouth of the Tagus, was 24 miles in rea second, and consisted of an outer line inclosing an intrenche the latter being designed to cover an embarkation with fewe if such an operation should be delayed by bad weather.

Of these three lines the second was the principal. The originally designed for advanced defence, to check the ene give time for the occupation of the second, but during M delay it acquired strength, augmented by the winter rains swe streams.

The works included 50 miles of fortification and 125 fo 600 guns. A great British fleet lay in the Tagus, the marines occupied the third line, the sailors manning the gunboats River. The Portuguese Militia and the Civic Guards of Lisb 6,000 Spaniards, assisted in the defence; the Native troops pr manning the guns and garrisoning the forts, leaving the Britis for the field.

The first line, flanked by gunboats on the Tagus, from Alh the right, followed for 5 miles a lofty ridge defended by 13 r which was defended by Hill's Corps. The next 5 miles, defe the Light Division and three redoubts, presented two salient m and an intervening valley. In the centre of the line Mt. commanding the adjacent country, was crowned by an redoubt and three smaller works mounting 44 guns, the garrisoned by 2,000 men of Pack's Brigade with a reserve in r

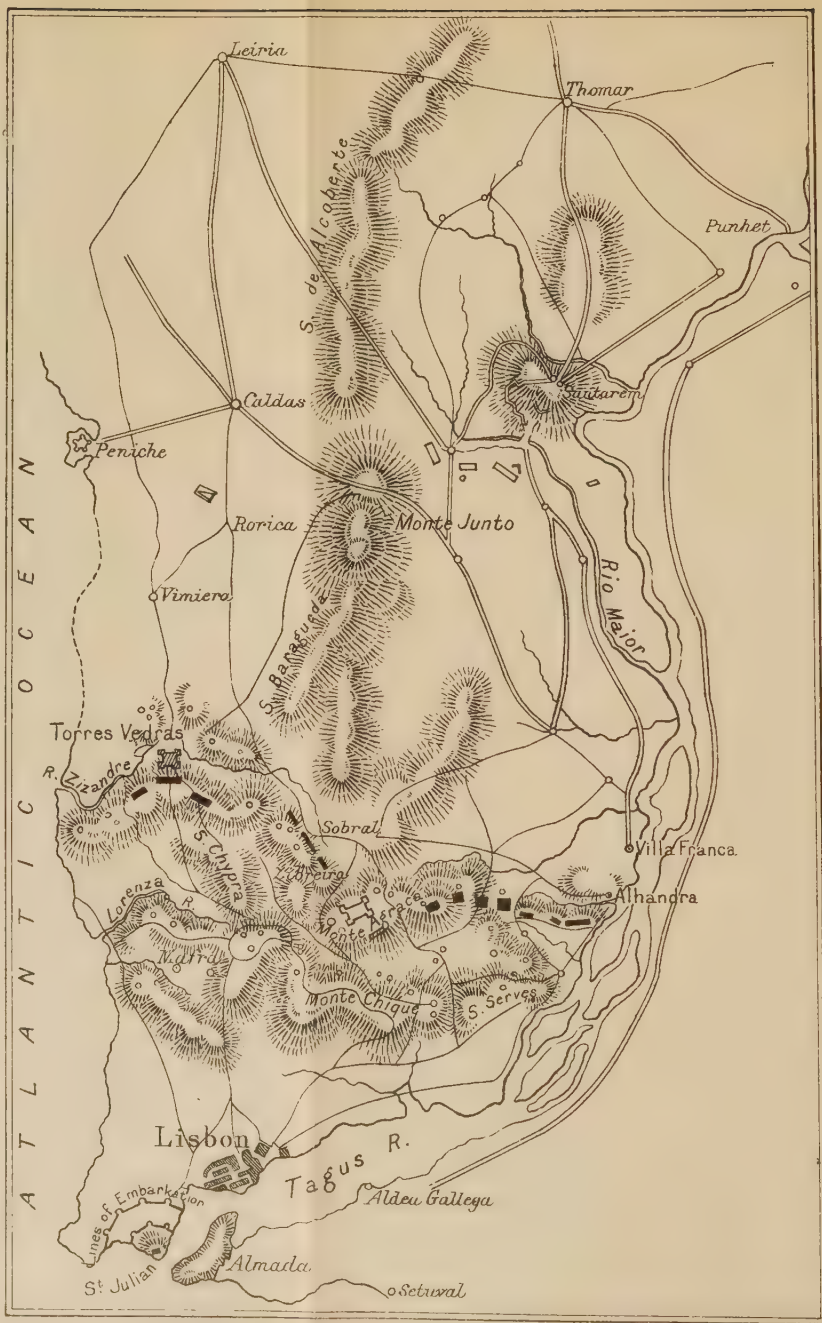
The 7 miles from Zibrera to Torres Vedras formed a strong with the river in front, defended by the 6th Division. H Wellington's Headquarters, connected by visual telegraph whole line.

The heights of Torres Vedras were secured by a great mounting 40 guns, with smaller forts commanding the app On the left were smaller works, but the chief defence here Zizandre River.

The second line was strongly defended by redoubts, sca ditches and intrenchments.

The aim and scope of all the works was to bar the roa pierced the line and to strengthen the favourable fighting between them, without impeding the movements of the army.

The ground in front assisted the defence, Monte Junto with cutting the French position in two and compelling them to their army on one side or the other.



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The garrison was intended to be from 10,000 to 12,000 men.

The objects the intrenched camps were intended to fulfil were:—

1st. To threaten the enemy's flanks if they ventured into the heart of the country, leaving them in rear of him.

2nd. To prolong the defence of such places as the enemy was obliged to besiege.

3rd. To give to small places the advantages and the properties of fortresses of the first order.

It is better to give Vauban's idea in constructing them in his own words: "I suppose that the enemy opens the campaign with 100,000 men, which we have only 80,000 to oppose. From these 80,000 let us detach 25,000 or 30,000 in two camps, intrenched up to the eyes (*jusqu'aux dents*), under the two frontier places most threatened, and which, thus reinforced, will from their position render the siege of any other place impossible. These two places, one of which the enemy will be obliged to besiege if he wishes to advance and not to let the campaign pass without obtaining advantage from his superiority, and each of which disposes for its defence of from 14,000 to 15,000 men, can neither of them be besieged by a body of less than three times their number, or 45,000 men, without running the risk of the siege languishing or failing. There will therefore remain to the enemy, both for forming his army of observation and for the detachments necessary to keep up his communications, 50,000 men. But 50,000 or 55,000 men is exactly the force which remains to our army, after making the detachments required to form the two intrenched camps. From the first moment of the siege it can, then, be considered as equal to the army of observation, occupied with at once covering this siege and the communications, both those of the besieging army and its own. This equality of the army of observation with the defending army cannot last long, for this latter, covering by its position the second place provided with an intrenched camp, waiting until the enemy is so taken up with the siege of the first that he cannot give it up, will make the garrison of the second intrenched camp join him, and will find himself 65,000 strong, which will enable him either to act against the army of observation or to detach against its communications so strong a body

that it will find it impossible to maintain them while continuing everything else, that is to say, to sustain itself at the same time in position, and to cover the besieging army."

Vauban, who had increased the importance of fortified places by the creation of intrenched camps, announced towards the end of his life that before another century they would have to be enlarged still further.

Intrenched camps should be established on strategic points which also possess tactical advantages. The principal use of intrenched camps is to afford, if necessary, a temporary refuge for an army, or the means of debouching offensively upon a decisive point or beyond a large river.

Such camps should be near the base of operations, to prevent their being cut off in case of the enemy's advance.

To serve as a refuge or to favour a debouch, the camp, when on a river, should be on the bank towards the enemy; and in order to prevent the enemy taking the camp in reverse by passing at some other point, it should be completed by fortifications on the other bank.

Intrenched camps may prove of the greatest importance as a refuge for an overpowered or beaten army, as the following examples will suffice to show; they can, however, be only temporary refuges, means of gaining time and of collecting reinforcements; when the enemy has to be expelled from the country, operations in the open field must always be resorted to.

Instances of Intrenched Camps.

The intrenched camp of Buntzelwitz saved Frederick the Great from destruction in 1761.

That at Kehl, held by Moreau in 1796 against the Archduke Charles, withstood all the efforts of the latter for three months; Strasburg, on the opposite bank of the Rhine, preventing his rear being turned.

The camp of Ulm, in 1800, enabled Kray to arrest for a whole month the army of Moreau on the Danube.

In 1810 the Duke of Wellington, having to defend Portugal

The intrenched camp of Plevna was formed on the rolling hills from 700 to 950 feet above the sea, surrounding the valley of the Tutschenitza, before it joins the Vid.

The works, which had an extent of 22½ miles, consisted of combinations of trenches and rifle pits, strengthened at intervals by redoubts, which served as flank defences to the trenches in line with them, and as strongkeeps to the works in their front. By this means three or four lines of infantry fire were brought to bear on the ground to be traversed by an attack.

The configuration of the heights radiating from the town resembles a fan, of which Plevna is the centre. The Reserves, placed in the centre, at a distance of from 2 to 3 miles, could easily support all threatened points, whilst ravines, formed by the deep erosion of the streams in the chalk formation, rendered the lateral communications of an attacking force extremely difficult.

Plevna was of strategic importance, as the junction of several important roads, but chiefly from its position within three days' march of the Russian crossing place over the Danube at Sistova, threatening the right flank of their advance to Shipka, and barring the roads to Sofia and many minor Balkan passes.

The Russians crossed the Danube at Sistova on June 26th, 1877, and captured Nicopolis on July 15th.

Osman Pasha arrived at Plevna from Widdin on July 16th with 25,000 men, and immediately commenced the line of works between Bukova and Grivitza.

On July 20th he was attached by 9,000 Russians under Schilder-Schuldor, who were repulsed with a loss of 2,920, one-third of the force engaged, and fell back towards Nicopolis.

Osman continued to strengthen the Bukova-Grivitza works, and commenced the Radichevo and Opanitz groups, and his force was reinforced to 40,000, with 60 guns. He was again attacked on July 30th by 30,000 Russians, with 176 guns, under Krudener, and again completely repulsed the Russians with a loss of 7,305, about one-fourth of the total force.

The Russians fell back about 6 miles and awaited reinforcements, which by the beginning of September raised their strength to 80,000 infantry, 9,000 cavalry, and 440 guns.

Osman continued to strengthen the ground already occupied, added a group of works about Krischin, and was reinforced to 50,000 men, with 80 guns.

After a bombardment from September 8th to 10th, a general assault on the Grivitza, Radichevo and Krischin positions was made on September 11th by the Russians and Roumanians, this third attack being also completely repulsed, with a loss of 17,774, of whom 7,500 were killed.

The Turks now strengthened and extended their defences, adding the works west of Krischin and along the Vid.

The Russians now strengthened themselves against counter-attack, and awaited reinforcements.

On October 19th the Roumanians attempted to storm No. 2 Grivitza redoubt, but were repulsed with a loss of 929.

By the end of October, Plevna was closely invested by a force of 107,000 infantry, 5,000 cavalry, and 550 guns, while a field force of 35,000 infantry, 9,500 cavalry, and 150 guns, prevented any attempt at relief.

On October 31st Osman, being offered terms, refused to capitulate, but the garrison soon suffered terribly from want of supplies.

On December 9th Osman, after a desperate effort to break through across the Vid, and reach Widdin, in which he lost 6,000 men, had to surrender with the 40,000 men forming his garrison.

Plevna had cost the Russians 700 officers and 31,000 men, and had delayed their advance for over four months.

Bivolar
to Rahova
to Trestenik
Nikopolis & Rahova
Dolny Netropol
Gorny Netropol
Opanetz
from Viddin
Bukova
River Vid
Oltschages
Dubnik Brook
PLEVNA
Grivitza Redoubts
Grivitza Brook
Grivitza
Blasigas
Tyrnen
Middle Valley
To Bulgareni
Krischin
Green
Radichevo Ridge
Radichevo
Tutschenitza Ridge
to Tutschenitza & Bogot
to Lovcha
Brestovatz

Intrenched Camps—Modern Instance

—PLEVNA—

SCALE

MILE 1 3/4 1/2 1/4 0 1 MILE

Closed & half closed works
Batteries
Trenches & Communications
Huts
Paved roads
Ordinary roads
Tracks

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Stanford's Geog. Estab. London.

against Ney and Massena, retired into his intrenched camp at Torres Vedras, in spite of the clamour of the Portuguese and the protestations of his own officers, who reproached him with abandoning everything, even Almeida and Ciudad Rodrigo, the only fortresses which defended the invaded frontier. Supported on this vast intrenched camp, constructed in a short time, and with limited resources, he resisted the best troops and the boldest Marshals of the Emperor; and obliged them, after ten months of futile effort, to quit the country that they had, indeed, occupied and ravaged, but which was consoled for having lost and suffered so much by seeing itself completely delivered from the presence of the enemy, thanks to the fine combinations of the British General.

The intrenched camp of Shumla was of great assistance to the Turks in 1828 in defending the country between the Danube and the Balkan Mountains.

That of Plevna held the Russian forces in check for many months in 1877, and repulsed their attacks on three occasions with bloody loss.*

Bridge-heads.

Bridge-heads are the most important of all field works The difficulty of crossing a river, particularly a large one, in the face of the enemy, demonstrates abundantly the immense utility of such works, which ensure an army from the disastrous events which may attend a rapid retreat across a large river.

Such works are of special importance in an enemy's country.

Sir Edward Hamley recommends that the fortifications should be placed at some distance, half a mile or more, from the head of the bridge, and should consist either of a single enclosed work, if an isolated hill affords a suitable type, such as that of Mont Valerien in commanding the passage of the Seine; or preferably of several small detached works placed on an arc, and armed

* Fortresses had an injurious influence on the strategy of both belligerents in 1899–1900.—EDITOR.

with heavy artillery to keep the enemy's field guns at a distance, each occupied by two or three companies, and flanked by the fire of a central work placed near the bridge, protecting it from a night attack. In all cases the utmost facility being given for the issue of troops.

The possession of bridge-heads at Dusseldorf, Cassel (opposite Mainz), Kehl, Brisach, and Huningen, by the French during the wars of the Revolution, gave them continual superiority, by giving them free issue to the German bank of the Rhine for the offensive, and affording certain refuge in case of defeat.

One of the greatest defects in the Turkish operations in 1877 was that they confined themselves to the south bank of the Danube.

Lines of Investment.

Although an invading army may pass by fortified places without attacking them, it must leave a force to invest or, at least, to watch them.

In such a case it is very necessary for the investing force to strengthen its position by detached works commanding the routes by which the garrison might issue, or by which the siege might be disturbed from without. This was done by Napoleon at Mantua and by the Russians at Varna.

When fortresses contain a large garrison, and the sorties take the character of a battle, the line of investment should be fortified like a position. The different works should be sketched out immediately the investing troops arrive on the ground, and perfected as quickly as possible by means of field fortifications—*e.g.*, Metz, 1870.

The lines should be taken up according to the configuration of the ground, and should include any high ground approaching the enemy's works.

They should consist of an advanced line of posts, about 3000 paces from the enemy's works, to offer a preliminary resistance in case of sortie, and to allow the troops in rear time to occupy their positions. For this line all the obstacles available should be used—walls, hedges, ditches,

&c., strengthened by abbatis, inundations, &c., and all the roads by which the enemy can advance should be destroyed.

The second or principal line of investment, at about 7000 paces from the enemy's works, will be composed of closed earthworks or fortified localities.

Behind the main line a third line may frequently be necessary.

As the besieged forces within the circle of investment can always ensure the concentration of a superior force at any given point of attack on the outer line, an advantage he can increase by means of concealing his designs and making demonstrations in other directions; it is absolutely necessary that the lines of investment be solidly organised to ensure a successful resistance to sorties until the reinforcements, which have to march along the circumference of the circle, can arrive.

The same reasons make it necessary that the means of communication along the line of investment shall be improved to the greatest possible extent.

Colonel Von Boguslawski writes: "It may be reserved for a future epoch to discuss and fix the principles of the war of investment, as far as principles can be fixed for this kind of war. We venture to advance the following points as of capital importance:

1. To establish the whole line of investment solidly.
2. To pay special attention to strengthening the fortified line of detached positions, and to bind them together, which will not prevent such changes as circumstances may subsequently demand.
3. The works of fortification should in every case be adapted to the ground and to the locality. Earthworks, when the season allows of them, give the best cover, and allow the lines to be drawn very close to the enemy's works.
4. The organisation of a good and economical service for the distribution of the investing troops.
5. The establishment of a weak line of advanced posts, but still sufficient to present a very strong resistance.

CHAPTER VIII

FORTRESSES AND ARMIES IN THE FIELD

The Relation between Fortresses and Armies in the Field.

It is clear that a fortress can only second a field army, on the hypothesis that the latter holds a defensive attitude on the theatre of war, and that the army is in contact with it.

The fortress can play many parts during a campaign; either as part of the order of battle, as a refuge, a secured outlet for retreat, or when astride a river as a *tête-de-pont*.

The Seven Years' War furnishes many examples—at Prague, Torgau, Minden, Breslau, and the camp of Buntzewitz—where a field army has sought the shelter of a fortress. The wars of the French Revolution offer no case of this sort, fortresses at that time playing a part only in sieges and in manœuvres for their relief. During the wars of the Empire, fortresses became more and more of secondary importance, except in two cases: first, in 1805, when Ulm played a part analogous to that of Sedan in 1870; and secondly, in 1813, when Napoleon made skilful use of Dresden to support his movements. During this epoch fortresses were besieged, and for long: but whether taken or not, the wars followed their own course. Napoleon delayed neither in order to besiege or to invest a place, nor allowed himself, even when in the greatest straits, to seek refuge or be invested in a fortress.

Since that time fortresses have gradually regained their importance, but only as complete in themselves, as obstacles

which must be taken or turned by an enemy, and thus give time for preparation.

The Crimean campaign turned on the taking of a fortress, whilst the Italian campaign of 1859 ended when the quadrilateral was just appearing on the scene. In the war of 1866, between Austria and Italy, the same quadrilateral played a useful part, obliging the Italians to divide their forces.

In the war of 1870-71, the chief part of the first period of the war was a fight for the possession of Metz; of the second period of the war, a fight for the possession of Paris. All the battles delivered near or far from the capital, and in all directions, were fought solely to repulse attempts to relieve Paris, or to crush in the germ new armies destined to assist it.

During this war, fortresses never supported the field armies during battles, but were only considered as refuges. It is characteristic of the whole war that in it the fortresses were of greater importance than the armies, the latter appearing to exist for the former.

A German military writer says of this: "What a contrast to the wars of the first Empire! The reason is evident: the French armies failed to play their proper part, and consequently the fortresses, with their great powers of resistance, came to the front." But this explanation, and the deplorable result to both armies and fortresses, should warn us not to place too great a value on so one-sided an example. It was not until after the complete defeat of the French troops at Wœrth and Spicheren that the French fortresses assumed so great an importance. That their influence was in the end pernicious was not the fault of fortification, but of the Generals who misapprehended and misapplied its use. It may, with our present knowledge of the facts, be clearly assumed that, but for the fortifications of Metz and Paris, the only fortresses fitted even approximately to resist modern artillery, the Germans would have crushed all further resistance, have marched straight on Paris, and dictated peace within a few weeks. The resistance of Metz and Paris gave

time for France to organise fresh resources, and had the field armies retired instead of cumbering these places with excessive garrisons, and taken up a strong position on the flank of the German advance, with all the resources of Southern France behind them, the result might have been very different. Such a combination of political instability and military incompetence is not likely to recur.

We have seen that in the time of Frederick the Great, armies, at that period small in numbers, when reduced to the defensive, systematically sought support from fortresses during the battle. What fortresses can do, they did at this period: they resisted stoutly by themselves, they lent tactical support to field armies during the battle, and finally served as a refuge for beaten armies after the battle. One fact, however, should be noted. In these battles of the Seven Years' War, it was always the army which sought assistance from the fortress which was beaten!

At Prague, Torgau, and Minden, the armies in possession of the place could have obtained a success by a rapid offensive against a divided enemy, much more surely than by their passive attitude.

It may therefore be concluded that a field army in contact with a place has a chance of success, if it use the fortress to oblige the enemy to divide his forces, so as to beat him in detail by a rapid offensive. When this division of the enemy cannot be compassed, it is necessary to accept a defensive battle only in case of absolute necessity.

These examples also prove that a fortress near an army does not necessarily afford it a support; on the contrary, in most cases, it is a considerable obstacle to the judicious employment of the disposable forces. The important point is the manner in which the fortress is used.

That fortresses were never used as supports by field armies, during the wars of the French Revolution and of the First Empire, may be due to the inefficiency of the firearms then used, as a consequence of which numerical superiority had not then the importance it now has, and could be met, to

a certain extent, by great manœuvring skill and the use of the shock of cavalry. The small size of fortresses also at that time, showed, more clearly than at present, that an army shut up in such a place is without means of issue. These considerations, joined to the offensive spirit which animated the respective armies, led them to seek the means of a country's defence solely in quickness of movement, in the art of beating an enemy in detail by rapid strokes of short duration.

Sixty years have passed since then, and the conditions of warfare have almost altogether changed.

The position of fortification as a branch of the Art of War is greatly modified, as are all other portions of that art, by modern changes and inventions. The means of rapid conveyance of intelligence afforded by the telegraph, of swift communication by the railroad, the development of large armies under obligatory and general service, the invention of new engines of destruction, of ever-increasing power; must all exercise a profound influence on both the principles and form of war.

The desire to increase the power of the defensive will lead to the increased use of fortification, essentially defensive as it is in local effect. In the same manner as the deadly power of the firearm, developed during the American War in 1863 the tactics of the spade, the war of intrenchments; so may modern armies, speedily mobilised and organised for dealing crushing blows with overpowering forces at the outset of a campaign, lead to the increased use of fortresses, as shields behind which the weaker or less prepared combatant may delay the enemy and gain time for preparation.

Colonel Von Scherff says: "The war of fortresses is imminent, and if we do not take care, it may well become the tomb of field warfare." ("Rev. Mil.," 1879.)

Another German military writer says: "The existing factors of warfare lead towards the employment of fortresses and of fortification, which tend to take more and more precise forms."

Certain incidents in recent wars recall strikingly the doctrines on the relation of armies and fortresses in favour

in the time of Frederick the Great, and there is ground for believing that there is a desire to apply proceedings then in use to present requirements.

It is therefore desirable to consider what services can be rendered by a fortress at the present day as a support to a field army. For this the fighting round Metz in 1870 may be taken as an illustration, and in doing so a study by a German officer quoted in the "Revue Militaire" of 1879 will, in the main, be followed.

All the operations of the Army of the Rhine in 1870, from the beginning to the end, pivoted on Metz, either as a point of retreat, a *tête-de-pont*, an obstacle, a support, or finally as a place of refuge.

This great fortress, which, if properly utilised, should have increased the strength of the Army of the Rhine, was pernicious to it, and gave it no single advantage in the face of an enemy superior to it in number.

The general situation after Wœrth required the Army of the Rhine to retreat rapidly to the west of Metz; this movement was carried out from the 6th to the 10th August, and on the 11th tactical contact was effected with the place. Like a loadstone, this great place had attracted to it all the portions of the army deployed on an extensive front, and had concentrated them in enormous masses to the east of Metz. This attraction was so great that all the course of the Moselle above Metz, as well as the country to the south, between the Moselle and the Seille, remained unoccupied. The army was concentrated as for a battle, which there was no intention to deliver, and submitted to all the inconvenience of this concentration, when it could have occupied a greater front with much more advantage.

The French army had taken three days to cross a mile and a half; from Courcelles-les-Etangs to Metz, although nothing in the attitude of the enemy could justify this slowness. If irresolution in command must answer for this, the proximity of the place at least contributed to prolong this irresolution.

"A commonplace and irresolute commander will always have his feeble projects and half-measures influenced by an object so important as a great fortress, and the more so the nearer it is. The place appears on the horizon like an island in mid-ocean, for which a barque, course, chart and compass lost, makes all sail. And when the army is harboured in this seeming port of refuge, it forgets the essential issue during precious hours, for objects of comparatively little importance. Provisions, quarters, maintenance of order, and like difficulties attached to such a concentration, absorb and crush completely the intellectual force which should be directed to the general situation. It is necessary at once to surmount these difficulties—this is the urgent question—and as the place is there and guarantees momentary safety, the consideration of the general situation is postponed until they are settled."

It had been better for the French never to have retreated on Metz, for the influence of the place was from the first disastrous; but this was owing, not to the nature of fortresses, but to the handling of the army in this particular case.

The writer already quoted suggests that the French commander should have taken up a position between the Seille and the Moselle, to the south of Metz, having provided ample means of passage across the rivers, Metz itself should have been given a proper garrison and left apart from the army. Thus situated, the French would have been enabled to use fully the advantages offered by the fortress and the river; having the means of passing rapidly from one bank to the other, in order to fall suddenly on the fractions of the German armies when crossing, and thus to assume the offensive.* The Germans would have probably held the French in front, while a wing crossed the river to attack their rear. Such a movement was impracticable by the north, for the turning force would have had to make an enormous circuit, and entirely separate from the German army. On the south

* See Soult on the Nive, near Bayonne, against Wellington, 1814.—EDITOR.

the turning force would have had to go as far as Pont-à-Mousson and Champey to cross the Moselle, while the French could at any moment have taken the offensive by passing up both banks of the Seille.

Unless the offensive was assumed, the French must have retired from this position to avoid the envelopment of their right wing. After retiring across the river the French would still be able to draw advantage from the fortress and the river, and to do this should have taken the offensive on a wide front, and have attacked the Germans while divided by the river, while the garrison of Metz made demonstrations to the east and south against their communications.

This example, then, teaches that an army supported by a fortress on a river should, as much as possible, avoid a defensive battle; and should act offensively, as the only means of utilising the advantage of both the fortress and the river. Above all, it should keep clear of the fortress and not interfere with its garrison, which have their own part to play, which the presence of the army within the defences will only hamper and restrain.

As an army is not intended to protect a fortress, neither is a fortress created to protect an army. An army is before everything an active force, whose handling is rendered very difficult when it relies on the passive protection of a fortress, but whose value increases if its commander knows how to use the passive strength of the fortress to benefit the active *rôle* of the army.

It is necessary, therefore, to put a certain distance between the place and the army; if not, the place becomes more an obstacle than a support.

As instances of the value of fortresses to armies in the field when rightly made use of, the part played by the Quadrilateral in the campaigns of 1848 and 1866 in Northern Italy may be taken. Space forbids the narration of the circumstances of these campaigns here; suffice it to say, that the success of the Austrians was in large measure due in each case to the action of the fortresses, Peschiera, Mantua, Legnano, and

Verona, which form the celebrated Quadrilateral, and to the skilful use made of them by the Austrian commanders.

In 1848, Radetski, the Austrian Marshal, hitherto compelled to retreat, on reaching the Quadrilateral commenced a vigorous offensive. It is the Sardinian army which obeys, turning and returning, always defending itself, and nearly always late with its parry. The Marshal uses the fortresses as masks to oppose or lure his adversary, as curtains to screen his movements, as *têtes-de-pont* and posterns for debouching suddenly on the flanks or the rear of his enemy. He is completely at home in the Quadrilateral, and does not delay to make the foe feel it, whom he has allowed to enter his house only to hold and strike him with greater ease. Finally he expels him, and the impulse is so vigorous that the Sardinian army is obliged to evacuate, not only Venetia, but also Lombardy and its capital.

In 1866 the game of the Archduke commanding the Austrian army in face of the Italian host was more simple. The Austrian army, in this case, had not to retreat. The circumstances of the war permitted the Archduke to hope that his enemy would divide his army of his own accord. The Italian Staff, in forming two isolated bodies, did so because they considered that each was strong enough to paralyse the Austrian force and ensure them from all misadventure. The Archduke avoided anything which could discourage this idea, waited and watched, allowed the King's army to cross the Mincio unresisted, and let it enter the Quadrilateral to complete its isolation. Then, when the moment had arrived to act with speed and vigour, he struck, the result being the battle of Custozza and a two-days' campaign.

In these campaigns the Marshal and Archduke found in fortresses a source of activity and life—in short, of the offensive virtues.

It must be noted, however, that neither of these Austrian armies had suffered anterior check, and it is in this state

that the dangerous influences of fortresses are least to be feared.

Field armies which seek behind fortresses and strategic barriers, not a refuge or a resting-place, but a curtain or ambuscade, from behind which they can dart forth suddenly on the enemy, are not liable to the fatal infection which engenders so rapidly paralysis, catalepsy, and strategic death. On the other hand, the examples of Metz and many other places prove that an army which has been defeated and retires on a fortress is not in a condition to undertake that offensive action which is essential to success.

Fortification may, in skilled hands, improve an already good *morale*, but it can neither repair it when injured, nor create it when it does not exist, or exists no longer.

Fortresses which command strategic barriers, either in the form of intrenched camps, or in that of groups or quadrilaterals which command a whole region, are not refuges, nor is their object to defy investment.

Fortresses may, in case of necessity, enter into a commander's combinations, but their own safety should never in any way depend upon the presence of a field army. The alliance of fortifications and of armies, fertile, as has been seen, in skilful hands, may be a resource, but should never be a necessity.

Fortresses, whether permanent, as Metz, or improvised, as Plevna, are not made in order to allow the battle which is offered to be declined for ever; on the contrary, they furnish a means to re-establish broken equilibrium, to re-seize the initiative, to resume the offensive—in short, to gain time to deliver battle under better conditions. If fortresses cannot fill this *rôle* they become infinitely dangerous and had better be rased.

It will be understood that the above refers only to those large fortresses or intrenched camps capable of acting as strategic pivots, the smaller fortresses, intended only to merely hold some point of strategic importance and deny it

the enemy, have an humbler *rôle*, which they will fulfil by obstinate resistance and prolonged defence.

Army Covering a Siege.

When an invading army decides to attack a place, a sufficient force to carry on the siege will be assigned to this duty; the remainder may either continue its march or take a position to cover the siege.

Experience has proved that the best way to cover a siege, is to beat and pursue as far as possible the enemy's forces which could interfere with it.

If the besieging force is numerically inferior, it should take up a strategic position, covering all the avenues by which a relieving army might arrive, and when it approaches, as much of the besieging force as can be spared should unite with the covering force to fall upon the approaching army and decide whether the siege shall continue or not.

Napoleon has said: "There are only two means of assuring the siege of a place, one is, first to beat the enemy's army covering the place, driving its *débris* behind some natural obstacle, such as a range of mountains, or a great river; then to place an army of observation behind this obstacle until the siege is over and the place is taken."

The covering army should not be too distant from the besieging army, in order to be able to draw reinforcements from the latter in case of need.

Thus, Napoleon, when besieging Mantua in 1796, on the approach of the numerous forces which seemed to surround him, brought up the whole besieging army to reinforce the army of observation, and by their united aid fought and gained the battles of Lonato and Castiglione.

It is disadvantageous to be obliged to withdraw the whole besieging army, as it involves the suspension of the siege and the abandonment of the siege artillery; the latter being only

recoverable by defeating the succouring army and capturing the besieged place.

If the covering army be too distant, the enemy may, by a rapid movement, come unexpectedly upon the besieging army, which is generally in no condition to fight a battle. The consequence of this would be the raising of the siege and the abandonment of all the siege material.

It is in such a contingency as this that the use of outer retrenchments or lines of circumvallation becomes of importance to the besieging force, enabling it to remain on the defensive until the arrival of the covering army.

The covering army should occupy the central road in the direction from which a relieving force may advance, defending the others indirectly, by the fear occasioned to the enemy of being taken in flank or rear should he attempt to pass along one of the lateral roads ; these should be occupied by detachments of observation strengthened in their positions by intrenchments, defiles being fortified and bridge-heads constructed, to enable them to check the enemy's advance until succour arrives. Here, as in every case of defence, dispersion of the forces, that inevitably leads to partial reverses or total ruin, must be carefully guarded against.

The commander of the covering army should keep his force in as mobile a condition as possible, sending all unnecessary baggage and all his sick and wounded to the camps of the besieging force ; his army should be in perfect marching order, and the roads by which he may have to act repaired.

If a relieving army appears, the covering force must march to meet him and attack resolutely, whatever may be the relative force ; this is no occasion for hesitation or calculation, for the safety of the besieging force is at stake. The latter, after making sufficient provisions for guarding the siege works, will send all its disposable force to reinforce the covering army.

Should the covering army be defeated, the besiegers' lines forced, and the siege raised, the combined force may still rally and organise itself for futher action.

If the following lines remain close to the fortress, supplies may be cut off, and the increased numbers may soon reduce the resources of the garrison.

Should it leave a portion of its numbers to reinforce the garrison and again take the field, it is possible that the concentrated and besieging armies united may attack the reduced numbers successfully.

The leading instances showing the successful opening of a siege, are—

The opening of the siege of Sedan by the German under General Von Werder in 1870–71, against the army of General Bourbaki, greatly superior in force in number, although very deficient in training and discipline.

The opening of the siege of Mantua by Napoleon in 1796. There were numerous examples in the days of Marlborough.

CHAPTER IX

MARITIME EXPEDITIONS

ANY instruction of British officers in the Art of War, however condensed and elementary such instruction may be, would be incomplete if no reference was made to maritime expeditions.

The British Empire centres in the island of Great Britain; while its outlying possessions are separated by stretches of ocean, along which circulates that stream of commerce which is the life-blood of the Empire. The first need of such an empire is command of the sea; without this it can exist only by the sufferance of its stronger rivals.

With this naval supremacy, which is so all-important, we have here no immediate concern, but it may be pointed out that the duties of the navy during war are of a nature both defensive and offensive. To guard the commerce of the Empire, to keep the ocean clear of hostile fleets and protect the Imperial shores from their descents, are duties defensive in their nature, although their execution may involve offensive measures; but this, though essentially necessary, will never of itself enable Great Britain to emerge victorious from a contest; to do this the offensive must be assumed, and the enemy struck in a part so sensitive, that he will be compelled to defend himself. This can only be done by means of maritime expeditions or descents, in which naval and military action are combined, and which form the subject of the present chapter. (*See* Appendix.)

To enable a State to undertake a maritime expedition, it must possess the command of the sea, at all events to such

* Every officer should read Capt. A. T. Mahan's works on Sea Power.

extent as will enable the expedition to arrive safely at its destination, and to disembark the troops.

History records very few instances of maritime expeditions on a great scale. Napoleon planned and prepared for a descent on the coast of England with 150,000 men, while 10,000 additional troops were to invade Ireland, but he did so under the expectation that with the aid of Spain, Holland, and Genoa, he could obtain the command of the Channel: a hope crushed by Nelson at Trafalgar.* The descent on the coast of the Crimea by France and Great Britain, in 1854, is the only modern instance of a maritime expedition on a large scale, and in that case the command of the sea possessed by the Allies was supreme and uncontested.

Expeditions of a strength of even 30,000 men are very rare; they equally require the command of the sea, and with the large and rapidly mobilised armies of modern times, and the means existing for rapid concentration, could effect nothing against a great, or even a second rate, Power, if directed on a point where these forces could be brought to bear on the expeditionary army.

Jomini says that a descent can be made with this number of men in four cases. 1st, against colonies or isolated possessions; 2nd, against weak Powers which cannot be immediately supported from abroad; 3rd, for the purpose of effecting a temporary diversion, or to capture a position which it is important to hold for a time; 4th, to make a diversion, at once political and military, against a State already engaged in a great war, whose troops are occupied at a distance from the point of descent.

Maritime expeditions on a small scale, consisting of a few thousand men, are far easier to undertake and execute, and of them there are many instances. The military history of Great Britain abounds in the records of such expeditions; by them she conquered her Empire, and acquired her vast

* Napoleon gave up his design after Calder's action off Cape Finisterre, July 22, 1805, and went to the Danube. He captured Mack at Ulm two days before Trafalgar.—THE EDITOR.

colonial possessions. This fact alone would make the subject an interesting one to British soldiers, but this interest must be increased by the conviction, that in any future war in which Great Britian may be engaged with a civilised Power, such expeditions must be a very prominent feature, for it is by means of them alone that she can attack her adversary and defend her colonies.

It is by means of such expeditions, also, that she can alone effectually counteract the depredations threatened to be made on her commerce by privateers or armed cruisers, in case of war. By the seizure of her enemy's colonies or outlying possessions by maritime expeditions, hostages might be provided sufficient to extract compensation for any such destruction at the termination of the war.

Necessary Steps to Ensure Success.

The landing of troops in the presence of an enemy prepared to receive them, is so difficult an operation, that every effort must be made to deceive the enemy and take him unprepared. For this purpose the preparations for the expedition should be made as quietly as possible, and its destination kept absolutely secret.

The object of the expedition should be clearly defined, the means of attaining it thoroughly worked out beforehand, and every contingency provided for.

The relative positions of the naval and military commanders should be clearly understood; history relating many instances when discord or misunderstanding between them has produced failure. Vernon and Wentworth at Cartagena 1741, Chatham and Strahan 1809.

The point chosen for the landing should be one where the vessels may securely anchor, and if possible sufficiently close to the shore for the fleet to cover the landing with its guns. The shore should be suitable for the boats to beach on, and there should, if possible, be such conformation of the ground as will enable the troops first landed to take possession of some strong point and cover the debarkation of the rest.

An army landing upon a coast must always keep its principal mass in communication with the shore, which is at once its line of retreat and its base of supplies.

Its first care should be to make sure of the possession of a fortified harbour, or at least of a tongue of land which is convenient to a good anchorage, and may be easily strengthened by fortifications, in order that in case of reverse the troops may be re-embarked without loss and hurry.

There is not much to fear from any landing of corps in a war, between France and Germany, for example, as diversions apart from the main action on the frontier. (See Von der Goltz, 350–353.) Such operations might frighten the masses, but could be easily met and repulsed under any proper system of military organisation. Jomini regrets from the point of view of a student of the art of war that Napoleon's forces did not cross the Channel in 1805. It would have been an interesting, and probably final, example of invasion by sea on a colossal scale. England is the only country that could at present transport a fully equipped army, such as any of the three German Armies of 1870, across the seas. Study the expeditions to Egypt, 1798, 1801, 1882: the Walcheren Expedition, 1809, the Expedition to the Crimea, 1854, the Federal movement to the York Town Peninsula, 1862. In all these discussions note the determining influence of command of the sea. Observe the recent combined military and naval operations of the Japanese, and of the Americans against Spain. A singular fact in connection with the Chino-Japan War was that the Japanese committed themselves to the invasion of Korea before the Chinese fleet was crushed.

In regard to all these questions, consider the increased power of defensive positions to resist attack by landing parties or in the interior of the invaded country. The utility of Volunteers for stopping landings is much increased and free corps and cyclists would harass the invader from the start. The facilities for scouting and conveying information are greatly increased by the use of motor cars, which was advocated by Mr. H. W. Wells and by myself years before the manœuvres of 1903.

CHAPTER X

INFLUENCE OF CLIMATE ON MILITARY OPERATIONS*

There have been many cases in modern wars in which mere accidents of climate and weather have been disastrous to armies, but in most of these over-confidence or official negligence has done quite as much harm as natural forces. For example, Napoleon's invasion of Russia was planned with reckless lack of prevision; whether advancing or retreating, the march of each corps was conducted without reference to those who followed on the same road. It was not the snow only that ruined the Grand Army, its effectives were reduced one half before the retreat began, and the bad weather simply hastened what would have been a disaster in any case. Before a week had passed, and long before summer was over, 10,000 horses had perished for lack of nutriment.

Napoleon was rash; and in war Fortune has only crowned with success those whose daring—like his in all previous campaigns—had no relation to caprice, whose initiative was based on elaborate and profound calculations, and whose careful preparation left nothing to chance. If his counsels to his brother in Spain in 1812-1813 be compared with his own proceedings as he marched to the Niemen and the Dnieper it will be seen that in the former year he was predestined to disaster. Yet when he recovered himself in 1813, all Europe in arms could with difficulty force him and his raw levies back to the Rhine.

That snow is a formidable obstacle to military progress can be learned from many a campaign, but on some occasions ice has been an avenue to success. It was over the ice that

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the troopers of Pichegru captured the Dutch fleet on the Texel in 1795. Barclay de Tolly led the Russians over the frozen Gulf of Bothnia to Sweden in 1809, and the ice-bound condition of the river St. Lawrence in winter complicates the question of the defence of Montreal and Quebec against the United States.

Frost was fatal even in the Peninsula, and imprudence in the use of alcohol increased the dangers from bad weather. From these causes, in January 1813, no fewer than 150 of King Joseph's French guards were frozen to death in the Guadarrama Pass. Wellington's movements on the Agueda during the same month were hampered by snow. Yet Napoleon in his eagerness to cut off Moore had crossed the Sierra Guadarrama with but little loss in December 1808, when it was covered with snow.

The remarks of Quintus Curtius about the sufferings of Alexander's men in the Caucasus may be applied word for word to the retreating French in Russia after November 6, 1812. "Dreary scenery and impassable wilds terrified the exhausted soldiers, they were astonished by solitudes without a vestige of cultivation or of man. So deep were the snows that shrouded the ground, which was bound fast by ice and frost, that no sign was perceived of birds or any beasts remaining out. The light was rather an obscuration of the sky, resembling darkness."

But it was reserved for the Russians themselves to afford the latest example of the terrors of mountain passes when frost and snow set in. At Shipka their 24th Division lost over 6000 men during the storm of December 18 to 23, 1877. Gourko lost 2000 men, frozen to death, during this same storm. Again, in the movement from Plevna to Philippopolis, Daudeville lost 1000 more; while during the march to the valley of the Maritza bad food and the lack of change of clothing laid the seeds of typhus and typhoid, which soon broke out with terrible malignity.

A sudden thaw is frequently as adverse to the progress of armies as a snowfall. During their movements from

St. Dizier to Brienne, January 1814, the French troops underwent the most dreadful fatigue in forcing their way through the deep and miry alleys of the great forest of Der. The frost had given way, and the thaw which succeeded had rendered the execrable cross-roads all but impassable. It was only by the greatest efforts that the guns and artillery waggons could be dragged through; the peasants harnessed themselves to the guns and toiled night and day through the mud till at length the forest was passed and the exhausted troops emerged into the open country. Throughout the whole campaign of 1814, in the deep and heavy soil of Champaigne, with bad country roads and wretched weather, the sufferings of the soldiers on both sides, who were constantly manœuvring, were aggravated to an almost intolerable degree.*

How fallings out and mortality may be diminished in the same climate is strikingly exemplified by a comparison of the operations of Wellington in the autumn of 1812 with those of the spring of the following year. During the march from Salamanca to Madrid in 1812, two men in ten fell to the rear, while during the march from the Douro to Burgos in 1813 not more than 8 in 500 dropped on the march. No better proof could be afforded of the excellent management of the Commander-in-Chief, when it is remembered that there were not less than 80,000 men moving forward in the same direction at the same time within touch of each other, with cavalry, artillery, tents, and baggage.

Climate remaining the same, mortality varies with hygienic arrangements. The loss in our West Indian battalions has diminished in a most gratifying manner in a few generations, but the Russians in Turkey in 1878 were in nearly as bad a state as their predecessors in 1829.

Everything went wrong with the unfortunate Walcheren Expedition in 1809. When already half spoiled by naval, military, and official incompetence, it was ruined by fever. The disease first showed itself amongst the troops in South Beveland, who had not the opposition of an enemy to keep

* See Alison, "History of Europe," chap. lxxxv.

their minds and bodies in healthy action, but after the fall of Flushing it broke out among the troops in Walcheren. The island, being so flat, is little better than a swamp; the ditches are filled with putrid vegetable and animal matter, the quantity of pure water is very limited. Nearly one-third of the native population is regularly attacked by fever every sickly season, in spite of their attention to cleanliness in buildings and person, and no remedy could be devised to check its ravages in the army. Even those who recovered from the disease itself had their constitutions so shattered that their physical power was materially diminished. In July 1809, the 81st Regiment had 650 men fit for duty, in September only 40, and of 35,000 officers and men who returned to England 11,000 were in hospital.

During one of Grant's campaigns in Virginia the weather had been fair for several days, and the roads were getting in as good condition for the movements of the troops as could be expected, for in that section of the country, in summer the dust was usually so thick that the army could not see where to move, and in winter the mud was so deep that it could not move anywhere.

"The weather now began to get cloudy, and towards evening rain began to fall. It descended in torrents all the night, and continued with but little interruption during the next day. The country was densely wooded and the ground swampy, and by the evening whole fields had become beds of quicksand, in which the troops waded in mud above their ankles, horses sank to their bellies, and waggons threatened to disappear altogether. The men began to feel that if anyone in after years should ask them if they had been through Virginia, they could say 'Yes, in a number of places.' The roads soon became sheets of water, and it looked as if the saving of that army would require the services, not of a Grant, but of a Noah." *

Out of 24,000 British who perished in the Crimea, only 4000 were wounded; the remainder died of cholera and

* Porter's "Campaigns with Grant."

other diseases brought on by hardship and exposure, and no small proportion of the deaths were due to neglect.

In Cuba, in the war of 1898, about 600 United States soldiers died of wounds, but some 6000 or more of disease, and a large proportion of these deaths were due to defective medical and sanitary arrangements. This is how Mr. Atkins describes the condition of the Army Medical Corps and the weather. Speaking of the night after the fighting of July 3, he says :—

"There were not nearly enough tents, cots, medicines, doctors, nurses, or carriers. Everything was insufficient. I have never seen anything more pitiable than the spectacle of wounded men lying all night, without a tent-covering over them, on the muddy ground and in the soaking dew. Night on a hospital ground was a time of horror ; there was moaning everywhere, and one night I remember two men calling all night for someone to kill them."

Of another night, over a week later, he says :—

"A thunderstorm came—such thunder as I have never heard and never thought to hear—so near, tremendous, and splitting. With it came a tropical storm of rain, falling in a wall so that you could not see through it. Soon the ground where I lay was under water. A volunteer regiment had arrived late at night, and had no time to encamp themselves ; the morning revealed them lying in a lake. The horses were all frightened with the storm, and came round the tents whinnying. And in the middle of it all, two men who had been crying out deliriously in the 'hospital' began to wander about in the field gibbering. This was a hospital in which there were cases of yellow fever."

In support of the contention that foresight, plenty of clothing, abundance of food, good discipline, and good boots will enable healthy men to pass with comparative impunity over mountains covered by snow and ice, may be adduced Manteuffel's rapid march with two corps and 168 guns over the Côte d'Or, between Dijon and Langres, January 13 to 16, 1871. At the same period Bourbaki's army was

perishing without any rapid marches in easy country, and he wrote to De Freycinet, "Men and horses are broken down with fatigue; you have no idea of the sufferings which the army has endured since the beginning of December. It is perfect martrydom to hold its command." The brave old soldier broke down and tried to commit suicide, and his army fled into Switzerland, where a convention was signed between General Clinchamp and the Swiss General, Hertzog, who with a large force had been guarding the neutral line. On February 1st the relics of what had once been an army of 133,000 men crossed that line and laid down their arms. The Germans had captured about 15,000 men with 19 guns, before their escape to neutral territory could be effected; while 84,000 surrendered to the Swiss. Most of these unfortunate men—surely the most to be pitied of any of the victims of the war—arrived in Switzerland in a state which defies description. "Their clothes were rent, and dropping off them in tatters; their feet and hands were frost-bitten. While the shrunk features and crouching gait told of gnawing hunger, the deep cough and hoarse voice bore witness to long nights spent on snow and frozen ground. Some had bits of wood under their bare feet to protect them from the stones; others wore wooden sabots; hundreds had merely thin cotton socks, and many none at all; others who appeared well shod would show a boot without sole or heel—the exposed part of the foot, once frozen, now presenting a wound crusted with dirt. For weeks none had washed, or changed their clothes, or put off their boots. Their hands were blacker than any African's. Some had lost their toes; the limbs of others were so frozen that every movement was agony. The men stated that for three days they had neither food nor fodder served out to them, and that even prior to that period of absolute famine one loaf was often shared between eight of them." *

In his "Defence of Plevna" Capt. W. V. Herbert describes the horrors resulting from severe climate and scarcity of food:

* Colonel Hozier, "The Franco-German War," ii. p. 250.

"The sentry service in our own redoubt, as well as throughout camp, was of a cruelly severe character in the rigour of a Bulgarian winter. The original four hours had to be reduced to two, then to one hour. Fixed, almost buried alive, in a hole four feet deep, with the upper part of the body exposed to the bitter blasts, the lower embedded in the frozen ground, unable to move (the slightest attempt at a trot, the very act of stepping out of the hole, attracted the enemy's bullets), insufficiently fed, compelled to exercise a ceaseless vigilance, struggling against the dangerous drowsiness engendered by frost, the men looked upon sentry duty as the last refinement of torture. Our splendid great-coats were invaluable to us. When snow was on the ground the cold was less severely felt: snow with five degrees below freezing-point was better than one or two degrees above freezing-point without snow. The long, winding line of sentries, lost in the murky distance of a bleak winter day, with only the dark hoods and the bayonets visible on the white ground, presented a grotesque and striking appearance.

"By the beginning of November the rations had already been reduced, more particularly as regards meat. Bread made of maize-meal, and baked in Plevna, took the place of biscuits, the large stock of the latter commodity being retained in view of a possible sortie and a march across a famine-stricken country."

Another quotation from the same work will illustrate the awful scenes which result from defective medical arrangements:—

"There was a deficiency of drugs, quinine was almost entirely absent. Lint was wanting, garments had to be cut up for bandages, however much clothing of every description was in demand; wounds could not be bound up during the last days of the investment for want of material. The convalescents had no strengthening food. Invalids quarrelled for precedence. The German surgeon, Lange, said that he had not taken off his clothes for four weeks and had no more than three hours' sleep per night."

This was in Plevna in 1877; similar scenes took place in Beaugency in France in December 1870. In the theatre alone were upwards of 200 desperately wounded men. For many hours there was no medical man in the place. As the wind was intensely cold, diminished circulation hastened the end of many a man who would have been easily cured if attendance could have been prompt. The dead and dying lay close; as the former were removed their places were forthwith filled. Even water, for which there were incessant demands, could not be procured in sufficient quantities.

During Chanzy's retreat, December 1870, the weather had been dreadful. On December 12th it was particularly bad. A torrent of rain had melted the snow and produced a thaw. The roads were everywhere exceedingly slippery, and the fields were too muddy for the passage of horses and carriages. Nevertheless the march was effected with a reasonable degree of regularity.

But, severe as were the sufferings of the retreating French, the pursuing Germans were in nearly as bad a case. On January 9 the roads were once more as hard as iron from frost, and were covered with ice, which remained for days and made the cavalry nearly useless in the actions round Le Mans. The Commander-in-Chief had to dismount and walk, his staff were in the same plight unless they tried to ride in the ditch by the side of the road. The artillery and train horses were frequently falling, still the army was compelled to press on.

Cold in itself is not very trying to healthy men. Nansen and his comrades enjoyed the very best of health during their Polar expedition, and it will be remembered that he and Johansen actually gained in weight during the sledge journey. Soldiers will stand cold well if well fed, well clad, and provided with warm shelter, as were Von Werder's men in 1871, but to the troops of Prince Frederick Charles marching on Le Mans at the same time, the slippery condition of the roads and the severity of the weather were severe hardships, and the difficulties were increased by fogs and mists in a close country.

Captain H. H. Deasy, late of the 16th Lancers, reached Yarkand on February 2, 1899, after a three months' winter exploration along the valley of the Yarkand river and the adjacent country, from the western end of Rashkam at the foot of the Karakoram mountains near Yarkand. The greater part of the route taken led through country which had never before been traversed by any European. Numerous steep and difficult passes, only crossed by execrable tracks, retarded his journey. To survey one stretch of the Yarkand river about eleven miles in length, a detour of nine marches had to be made, five passes crossed in mid-winter, one of them 17,000 feet in height, and five nights spent out in the open when the average minimum temperature was twenty-seven degrees below zero.

Some countries are turned into quagmires by even a day's steady rain; thus the routes in Belgium from Ligny to Gembloux, from Quatre Bras to Waterloo, and from Wavre to Frichermont were very difficult by reason of the rain of June 17, 1815, and this fact had a most serious effect on the plans of Grouchy, Napoleon, and Blucher. The officials and the mass of the people at the capitals frequently do not take these impediments into account, and generals are censured for enforced inaction. The Washington authorities were indignant at McClellan's slowness in 1862, but they had not the General's experience of Virginia mud. On two occasions during his Yorktown campaigns, "the divisions of Franklin, South, and Porter were with difficulty moved to Whitehouse, five miles in advance; so bad was the road that the train of these divisions required thirty-six hours to pass over this short distance." Again—"The supply trains had been forced out of the roads to allow the troops and artillery to pass to the front, and the roads were now in such a state, after thirty-six hours' continuous rain, that it was almost impossible to pass empty waggons over them."

The great scourge of armies in the past has been dysentery, and any but the hardiest troops succumb in great numbers to the consequences of lying on damp ground. In this respect

both besiegers and besieged were particularly unfortunate at Metz in the autumn of 1870. The French troops were bivouacked outside the town, between, and outside, the forts. They were insufficiently fed, their inertia had a bad moral effect which reacted on their health, but above all, the heavy rains in September and October made their state cheerless and unhealthy to a degree, and they were heavily smitten with sickness. The German investing soldiers had a more hopeful prospect; they were elated with victory and were well fed, but sturdy as the men were, remaining stationary so long on great battle fields or charnel fields soon told upon them. In some divisions 50 per cent. were ill.

The French, too, suffered severely in the Madagascar campaign. Mr. Bennet Burleigh gives a sad picture of the combined effect of climate and incompetence on their vitality. The mischances and mistakes were endless. Owing to the labour of constructing roads, as well as other causes, the sickness and mortality were heartrending. Out of some 15,000 men 6000 at least died from the effects of climate, and of wounds only 21. Not a man among the troops escaped fever. In one of the transports, the Ville de Metz, conveying sick back to France, there were 93 deaths on the voyage.

Though unaccustomed to the rigours of a severe winter, the Japanese soldiers in 1894–5 bivouacked on ground frozen and covered with snow, they marched in the face of driving winds —blizzards—for miles and miles, over rough stony ground, slippery with ice or frozen sleet or snow, starting at two or three o'clock in the morning, and frequently not getting to the end of the march till late at night, and all the time with the thermometer below zero. Some of them even marched in such conditions with frostbitten feet, their boots—or rather shoes, for they were not served with boots—having become worn, and offering no protection.

Compared with these records, the experiences of the British in their recent expeditions in Africa, north, south, and west, have been most reassuring. Sir Charles Wilson speaks in the most favourable terms of the climate from Korti to Khartum,

and Generals Baden-Powell and Alderson are enthusiastic about the delights of outdoor existence in Matabeleland and Mashonaland. With regard to supply, transport, and sanitation during our recent operations from Chitral to Tirah, and from Benin and Ilorin to the Egyptian Sudan, our troops seem on the whole to have been better managed in all these striking diversities of climate than has ever been the case before with the warriors of any world power except the Romans at their best.

The utmost difficulties arising from variations in temperature, climate, and character of the country have been met and overcome by British troops; in frequent instances the same battalion has in the same year endured the utmost caprices of nature. To illustrate the various climatic experiences of our regiments, examples under the territorial system can be supplied by one English, one Irish, and one Scotch regiment. The Liverpool Regiment in the last century fought in such different localities as Martinique, Niagara, Delhi, Peiwar Kotal, and Burma. The Royal Irish Regiment has fought in the same century at Pegu, Sebastopol, New Zealand, Afghanistan, Tel-el-Kebir, and the Sudan. The Royal Highlanders have fought in Kaffraria, in the Crimea, at Lucknow, in Ashanti, at Tel-el-Kebir, and in the Sudan.

The vicissitudes of climate, though often very trying, have not produced the least effect on the fighting vigour of our troops. Even when particular regiments were well-nigh decimated by sickness and other hardships, the men left fit for the battle were always true to their old traditions. As Sir Rennell Rodd says:—"Britain has never failed to find among her sons the men that she has need of. And they will never fail her till she turns her back on Empire, and forgets the sea."

ACTIONS IN VIRGINIA.

1861

Big Bethel	June 10
Rich Mt. and Beverley in West Virginia	June 11 and 13
Blackburn's Ford	July 18
Bull Run	July 21
McClellan organises a New Army	August, 1861—March, 1862
Ball's Bluff, near Leesburg	Oct. 21

1862

The Monitor *v.* Merrimac in Hampton Roads	March
Confederates evacuate their Works on the Bull Run	March
McClellan at Fort Monroe	April 4
York Town surrenders	May 3
Williamsburg	May 5
Norfolk surrenders. Merrimac burned	May 5
Hanover Court House taken	May 27
Battle of Fair Oaks	May 31—June 1
Jackson in the Shenandoah Valley	May 8—June 9
McDowell	May 8
Front Royal	May 23
Newtown	May 24
Winchester	May 25
Cross Keys	June 8
Port Republic	June 9
McClellan and Porter on the Chickahominy, and retreat to the James	June 25—July 2
Beaver Dam Creek	June 26
Gaines Mill	June 27
Savage Station	June 22
Glendale	June 30
Malvern. Harrison's Landing reached	July 1
Pope in Command North of the Rapidan	July 14
Cedar Mt.	Aug. 9
McClellan retires from Harrison's Landing	Aug. 16
Jackson turns the flank of Pope's Army	Aug. 25—Sept. 2
Bristoe	Aug. 26
Gainesville	Aug. 28
Groveton	Aug. 29
Bull Run	Aug. 30
Chantilly	Sept. 1
McClellan saves Washington	Sept. 4
Confederates invade Maryland	Sept. 5 - Sept. 22
Sharpsburg (on the Antietam)	Sept. 17
Confederates retire to Virginia	Sept. 22
Stuart's raid into Pennsylvania	Oct. 10—Oct. 13
Battles of Fredericksburg	Dec. 10—Dec. 15

1863

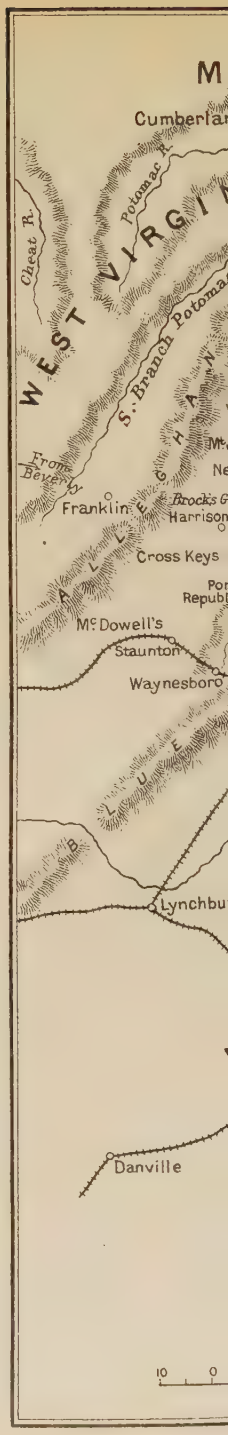
Battle of Chancellorsville	April 28—May 5
Lee invades Maryland and Pennsylvania	June 14—July 14
Gettysburg	July 1, 2, 3
Mine Run	Nov. 27—Dec. 1

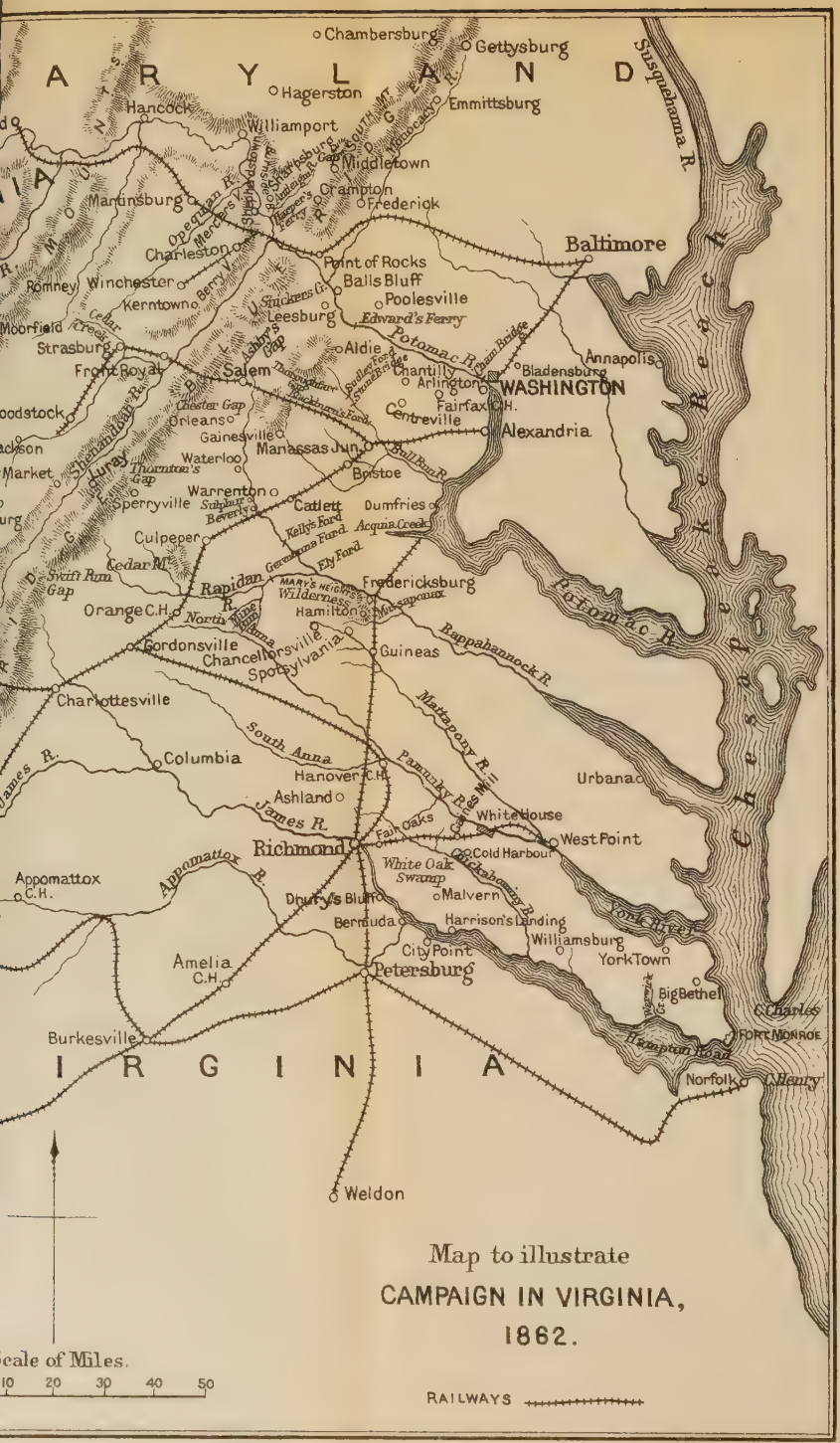
1864

Kilpatrick and Dahlgren's raid	Feb. 27—March 4
General J. Stuart killed	May 11
Grant crosses the Rapidan	May 1
Battle of the Wilderness	May 5, 6
Spotsylvania	May 10, 12
Series of flank marches by Grant to the Peninsula and thence to Petersburg	May 12—June 15
Grant defeated at Petersburg	June 18
Early's raid to near Washington	July 9—July 13
Raid on Chambersburg	July 30
Great mine exploded at Petersburg	July 30
Sheridan ruins the Shenandoah Valley	Aug.—Oct.
Battle of Winchester	Sept. 19
Battle of Cedar Creek	Oct. 19

1865

Five Forks	March 31—April 2
Richmond and Petersburg evacuated	April 2, 3
Lee's surrender at Appomatox Court House	April 9
Johnston's surrender	April 26





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AN OUTLINE OF THE OPERATIONS IN VIRGINIA, 1861–65*

Many causes of discontent, but particularly the anti-slavery views of the Northern States, alienated the minds of the people of the Southern States from the Union. Once Mr. Lincoln was elected president, preparations for secession commenced in many States. It was no longer a question of negro slavery or emancipation; Carolina first, and then ten other States, asserted the right of detaching themselves from the central Government at will, and formed a new Confederacy, with a capital at Richmond, in Virginia. Some States wished to be neutral, but had the usual fate of "weaker natures" between the "fell strokes of mighty opposites"; the other States were true to the old Federal Government at Washington, and adhered at all costs and with no regard to mere abstract theories, to Mr. Lincoln's resolve that the mightiest of republics should, even as the most absolute of monarchies, be one and indivisible.†

When Major Anderson, who commanded for the Government in Fort Sumter at Charleston, was obliged to surrender to General Beauregard and the Carolina State troops, April 13, civil war began.

Many of the best officers of the old Regular Army were of opinion that their allegiance was due, not to the common country, but to the individual State. It is not my duty to enter into the complicated questions of constitutional policy upon which this opinion was based. Mr. Jefferson Davis the Confederate President, no doubt, like Mr. Lincoln, the

* Lecture at Woolwich, republished by permission of the Committee of the Royal Artillery Institution.

† The names of the several States are given in the appendix, p. 188.

Federal President, believed the quarrel to be just, and most assuredly Generals Lee, Joseph Johnson, Beauregard, and J. E. B. Stuart had attained the highest strains of honour, and sacrificed their all to what they honestly believed to be their duty. Thomas Jackson's proceedings became an eccentric man and a strong religious enthusiast of the Puritan type; he was undecided; his father-in-law was a Federal; a consultation was held; prayer was resorted to; the father-in-law was earnest and eloquent; but, when the prayers were finished, Jackson rose from his knees and stated that his path was clear; he joined the South, carrying with him the perfervid zeal of one of Cromwell's colonels and an aptitude for war and a mastery of *ruses* seldom rivalled since the days of Hannibal.

Here I may remark on the absolute necessity for perfect military organisation and discipline, and a strong army with a clearly-defined status in every country, under every form of government. A regular army, 50,000 strong, under the absolute control of the central Government, would have nipped rebellion in the bud, and would have saved both South and North from four dreary years of internecine strife; from an expenditure of money greater than was incurred in all the other wars since Waterloo, the Franco-German war included; and from a loss of life without any parallel since the awful days when Napoleon left the Grand Army behind him on the vast expanse of snow from the Moskwa to the Beresina.

In 1861 the United States had not a national army, properly so called, therefore 300,000 Federal volunteers perished, and £1,000,000,000 of Federal money were spent before the Union was re-established in 1865.

We, of course, are now absolutely free from the passions which raged so fiercely round the international and other questions that were developed during this gigantic struggle, and we can look back on the policy of its statesmen and the strategy of its generals with impartiality as well as sympathy. One emotion, however, we need not control; we can all be

proud of the heroism which both sides, equally sprung from our own imperial race, displayed, and of their dauntless resolution "never to submit or yield, and, what is more, not to be overcome" while it was possible to fight on, and we can also, in common with competent critics of all countries, admire the magnificent military qualities displayed by the respective leaders.

It would be most interesting to discuss the myriad modes in which the fertile ingenuity of our Transatlantic kinsmen was displayed. Every variety of weapon was tried; some of these innovations have been permanently adopted; naval warfare was revolutionised by *Merrimacs* and *Monitors* and other strange, unsightly craft; the use of the spade; the use of cavalry in raids; the destruction and repair of railways, which were of more vital importance in this than in other modern campaigns, must not be discussed in this short space.

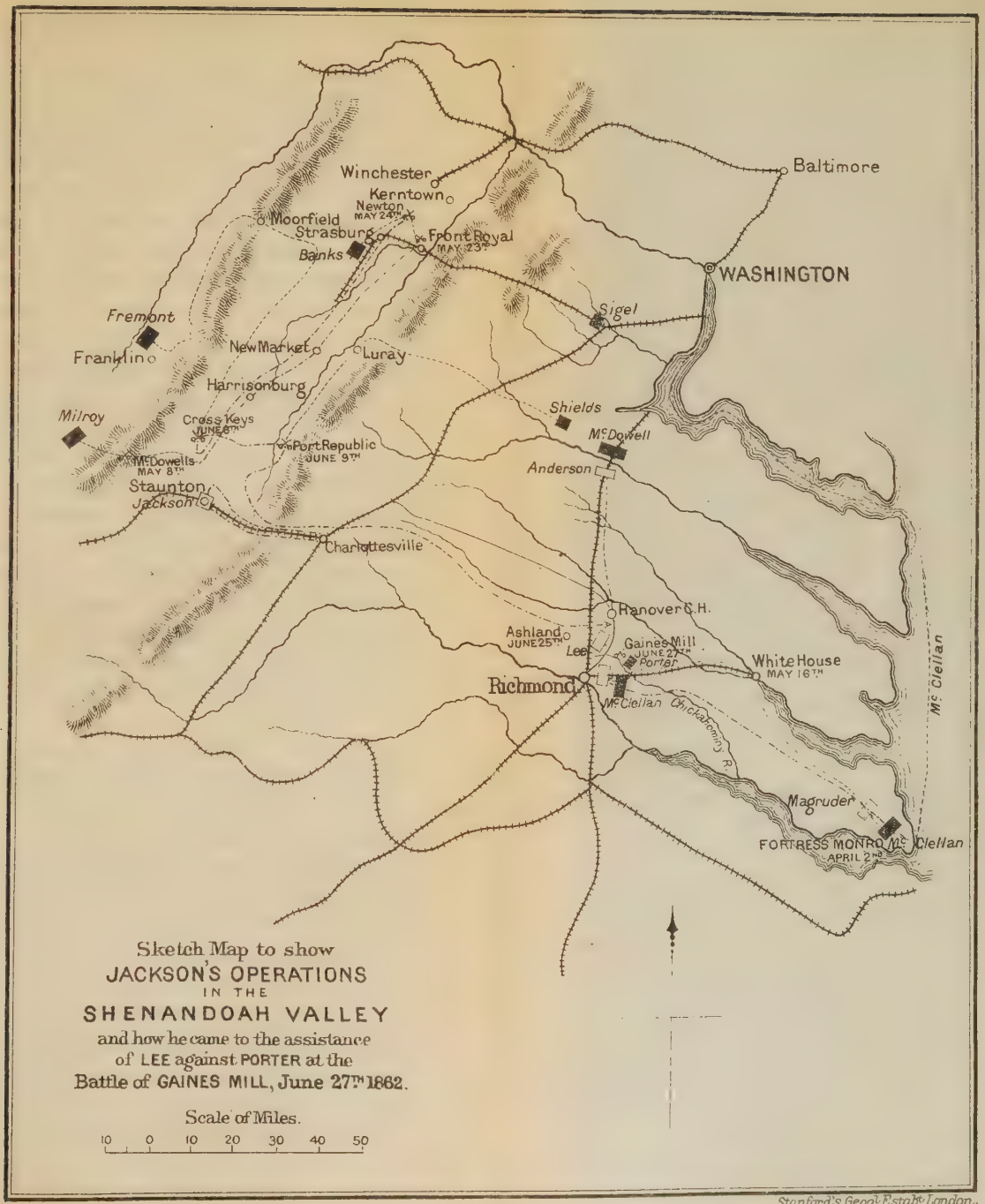
Before coming to the operations in Virginia, we must for a moment set forth the fact that, though these are the best known of the war, they are not the most wonderful, nor did they alone determine the fate of the South. A glance at any map will shew the vital importance to the Confederacy of that magnificent artery, the Mississippi. When the Federals, under Grant, Sherman, and others in 1862-3, got possession of the lines of the Cumberland and the Tennessee rivers, and took Vicksburg, they had so to speak, turned the Alleghanies, and could move into the very heart of the enemy's country, and threaten the communications of Richmond with the whole territory between North Carolina and the Gulf of Mexico. Simultaneously with these operations from the North, another expedition, under Admiral Farragut and General Butler, seized New Orleans—a great Southern emporium—and a strict blockade was established on the western coast, which rendered Confederate communication with the outer world almost impossible. These proceedings, of course, crippled the Confederacy, and directly affected the situation in Virginia. After their victory of Chattanooga, 1863, the Federals might hope, by a movement eastward, to

cut the enemy's resources in two, and, gaining a new base on the sea, proceed from Savannah and Charleston northwards towards Richmond, which would at the same time be assailed by the Federal armies in Virginia, and this was actually the principle underlying the justly famous campaigns of Sherman in Georgia and Carolina, 1864-65.

Before we analyse the campaigns in Virginia, it is necessary to discuss its topography and how far this affected the Federals, whose base, till they won the Mississippi, may be broadly described as bounded by the Potomac river, and as including all the territory to the north and west of it, and whose object was Richmond.

The lines of advance clearly were (1st), up the Shenandoah Valley—the fertile and beautiful valley of Virginia—from Harper's Ferry, by Winchester to Staunton, and thence to Richmond, or (2nd), from Arlington and Alexandria to Manassas Junction, and thence by Culpeper to Gordonsville and Richmond; this line could be connected with the valley line by the gaps in the Blue Ridge and by the railways running from Manassas and Charlottesville westward; another line (3rd), was from Acquia Creek to Fredericksburg, and thence by Hanover Court House to the Confederate capital. In the event of a simultaneous advance east and west of the Blue Ridge there was no small danger lest the defender, acting on interior lines, might imitate the Archduke Charles, in 1796, or Napoleon, in 1814, and beat each section of the invaders in detail. There were great difficulties in the way of a movement by the second line; obstacles in the shape of frequent streams and rivulets soon swollen into rivers by a few days' rain; woods and swamps; the notorious "wilderness"; and the mud of Virginia, as hard to traverse by any army as the road from Point-au-Jour to Gembloux was to Grouchy, after the battle of Ligny; of course, on the third line, the rivers became even more trying impediments to the progress of an invader.

To advance by all three lines was to run the risks inseparable from division of force, while to move by the two more



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eastern routes, and, not to utilise the Valley, was to expose the Northern States to an irruption from the Valley, or a "raid" by some brilliant cavalry leader such as J. E. B. Stuart, followed by the flower of the Southern cavaliers and their splendid horsemen, who rivalled in daring and varied efficiency the dragoons of Gustavus and the cossacks of Platoff. But the Federals had all the advantages of a re-entering frontier, which gives a choice of plans to an able general, and many chances of escape to one who is unfortunate. They had, moreover, the command of the sea; they could therefore have used their superior numbers to close the avenues leading to Washington, and into Maryland, to any forces that the Confederates could dispose of against either, and, descending into the Chesapeake Reach from their depôts on the Potomac, could have moved up the rivers York and James. After establishing new bases on these rivers, they would have turned all the enemy's positions from the Bull Run to Gordonsville, and have planted themselves within a few strides of Richmond. Better still, they could move from City Point on Petersburg, and, cutting all the lines to the more Southern States, have isolated Richmond, and compelled its evacuation at once, or its surrender after a short siege.

The advantages of flank as against front attacks were obvious to all the soldiers of the North as well as of the South. The officers, educated at the famous West Point School, added to their strong native common sense no small knowledge of the practice of Napoleon and the theory of Jomini. It would be well if our national and military history were as carefully studied at our own schools.

The true method of conquering the Seceding States was foreseen and described by men of skill and experience like Generals Scott and Sherman from the very first, and General McClellan was actually within twenty miles of Petersburg in July, 1862. But when, or in what state, did the arrogant and ignorant leaders of the masses listen to any voice except the clamour of faction? The teachings of military wisdom

were spurned by the chiefs of a triumphant caucus till the stern lessons of a terrible necessity, resulting from years of constant and awful suffering, compelled the politicians at last to retire from the direction of the army, and, leaving war to the soldiers of General Grant, turn again to their natural vocation of deceiving the multitude. We cannot here follow the political intrigues that were so fatal to the Northern cause. They are recorded in the pages of every Federal authority—from Webb to Sherman—and our people ought to study them with a practical object. The South was better directed:—the President, Mr. Jefferson Davis, had been a good soldier in his time. Moreover, it would not have been so easy to impose delusions upon the planters of the Southern States as upon the uncultivated crowds of voters of the Northern cities; again, from almost the very beginning harmony prevailed as a rule between the commanders in the field in Virginia and the political leaders in its capital.

The eagerness of the more incompetent advisers of Mr. Lincoln was inflamed by the unwonted spectacle of military power, which was suddenly arrayed in the neighbourhood of Washington after the challenge of the South at Fort Sumter. Fully 40,000 men rallied to the standard of the Union about the capital, and nearly half as many more gathered round old General Patterson about Philadelphia, and soon occupied Harper's Ferry, from which the Confederate leader in the Valley, Joseph Johnston, very wisely retired, as he had only a feeble force, towards Winchester. Moreover, a considerable body of troops collected round General McClellan about Wheeling, in West Virginia, and not only defeated the Confederates under Garnet at Rich Mount and Carricks' Ford (July 11 and 13), but won over the country between the Alleghanies and the Ohio to the Union, and threatened to penetrate into the Valley itself till circumstances, over which McClellan had no control, rendered it impossible for him to operate any longer in this portion of the theatre. Not only did these movements against the Seceders thus begin in the North, but in the York Town Peninsula, that is, the

space between the York and James Rivers, the Federals displayed some activity. However, their commander, Butler, was soon stopped at Big Bethel.

The campaign of 1861 is practically narrowed to the operations of Patterson (F.) *versus* J. Johnston (C.) in the Valley, and McDowell (F.) *versus* Beauregard (C.) along the Bull Run. Nothing could well be simpler than the situation. The Confederates held Centreville and the position along the Bull Run with some 20,000 men, who were decidedly of much better quality, individually, than their enemies. McDowell was at Arlington, and had some 30,000, with 10,000 in reserve. He could beat Beauregard alone; he could not beat Beauregard if Johnston joined him. Manifestly, therefore, it was Patterson's duty either boldly to attack Johnston, who never had more than 12,000 as against his 20,000 men, and drive him well up the Valley away from Beauregard, or to move by his own left and keep Johnston away from the issues of the Blue Ridge leading on Manassas. He was distinctly ordered to adopt either alternative. He was timid and adopted neither. McDowell advanced on Centreville; the Confederates retired behind the Bull Run. McDowell followed, and, not liking to force the river in front about Blackburn's Ford, manœuvred, July 18–20, to secure a passage on Beauregard's left flank by Stone Bridge and Sudley's Ford. He succeeded; but meanwhile Johnston easily eluded Patterson, and on July 19 marched 9000 men to Ashby's Gap, while Patterson was at Charleston, and thence to the railway, and they arrived at Manassas in detachments so considerable on July 19 and 20 as to enable Beauregard to defeat the enemy on July 21. The Federals crossed the Bull Run at Sudley's Ford, while Beauregard's troops extended from Stone Bridge to the right of Blackburn's Ford. These, however, soon changed front, and, being ably supported by Johnston's men, stopped the Federals throughout the forenoon and afternoon till the last of Johnston's troops having arrived at Manassas, Kirby Smith's brigade marched up from Manassas and entered into

the battle from the woods west of Sudley, and other troops, who had been guarding the lower fords, came up also on the Federal right rear. The troops of McDowell now went to pieces, and could not be rallied even at Centreville, and had to be led back into their camps by the Potomac.

Beauregard and Johnston could not follow up their victory, and contented themselves with occupying Centreville and constructing a series of works along the Bull Run and sending Jackson to re-occupy the Valley, no very difficult duty.

Now the Federals recognised the serious nature of their task, and set up about calling large forces together from all quarters, either to the Mississippi and its tributaries or to the Potomac. They were able to boast, at the end of the year 1861, of having more than 600,000 men under arms, and they had the good sense to recognise the fact that men with muskets are not soldiers, and they employed General McClellan, who had won some victories in West Virginia, to organise the "Army of the Potomac." He did well, very well indeed—better than D'Aurelle de Paladines in 1870; but no genius can improvise a good staff, good colonels and majors, good cavalry and good gunners, and in these particulars, notwithstanding all their lavish supplies of men and money, the divisions of McClellan's army were sadly lacking. Indeed, it was not till well on in 1863 that the mounted branch of the Federal service could pretend to cope with the horsemen of the South.

A skirmish at Ball's Bluff, in which the Northern folk met with a rude repulse in October, broke the monotony of drilling recruits and teaching officers their duties. But in the beginning of the new year the war fever became very strong again in the Press and in the War Office, now presided over by Mr. Stanton, no friend to McClellan. He was urged to advance; he urged prudence and delay; he had along the Potomac 200,000 men—a vast machine, not yet ready to work smoothly. Other forces were mobilised and directed through West Virginia towards the Valley. At last, in March, an advance was made to reconnoitre the Confederate

works, and a plan was adopted to dislodge them from their position by moving a large portion of the army to Urbana as a base, and thence by moving rapidly on West Point at the head of the York River to threaten Johnston's left flank before he could be ready for the movement, and to turn the tables by making the vicinity of Richmond, and not of Washington, the theatre of operations. This was a most judicious plan. An attack on the front of the enemy was difficult owing to bad roads, and, besides, was poor strategy. But Johnston had time to evacuate Manassas before it could be executed owing to the delays of either the administration or the commander-in-chief. The Confederates retired behind the Rappahannock, with headquarters at Gordonsville, and their troops in the Valley also, after some skirmishing near Winchester, fell back to Staunton.

McClellan's next plan was to go to the York Town Peninsula, land at Fort Monroe, and move up the Peninsula to Richmond.

Washington had been protected by a cordon of independent forts, with a garrison of 20,000 men. Banks was sent with a good column into the Valley, and, advancing past Winchester, reached Strasburg, which he fortified, and, as we have seen, Fremont was coming with some 30,000 men by several passes into the Valley. A fatal mistake was made by President Lincoln after McClellan had embarked his troops for the Peninsula; McDowell's corps was detained under a strange delusion that Washington was in danger. It does not require much skill in war to know that the best way to protect Washington was to make a movement with overwhelming force on Richmond. McDowell, in due time, came down to Fredericksburg; but, after long wrangling between McClellan and the political authorities, it was finally resolved to keep him between the Rappahannock and the capital, and thus the ruin of the army of the Potomac began.

We now leave, for a while, the other portions of the theatre, and follow McClellan's movements in the Peninsula.

After landing at Fort Monroe, he found that the enemy

had constructed a series of defences in three lines to impede his progress and that he had to drive their able "detaining" chief, Magruder, past obstacles, of which the most serious was York Town. However, he moved from Fort Monroe to York Town, which was evacuated once he was ready to storm it, and thence fighting his way along to Williamsburg, and thence to White House, which he reached May 16, having been delayed for six weeks in a march of ninety-six miles by the able dispositions of the Confederates, who were now under command of "Joe" Johnston himself. The manner in which Magruder held McClellan is another illustration of the truth of the remark, "the right use of a detaining force is the principal weapon in the military armoury."

McClellan marched from the White House to the Chickahominy, which was difficult to pass, rather by the swampy nature of the ground, than by its depth or width; he crossed it with most of his force, and left General Porter on the north bank to watch the Confederates about Hanover Court House, to drive them back, and thus connect McClellan's own movement with that which he had proposed to McDowell from Fredericksburg. Joseph Johnston fought the Federals in a two days' indecisive battle at Fair Oaks, May 31 and June 1. He was wounded; but McClellan's movement on his capital was paralysed, and the Federals did practically nothing except entrench themselves on their front facing Richmond for a few weeks. The Confederates were now commanded by Lee in the Peninsula, and the temporary loss of Johnston, a very able officer indeed, was more than met by the appointment of a strategist as ready, and as imperturbable as our own great Duke of Marlborough himself.

Lee did not dare to assault the enemy's front, which was soon very strong, with not two-thirds of their numbers, so he determined to test the strength of their line of communication with White House and, with this view, sent Stuart with his cavalry on a raid. Stuart rode right round the Federals, doing them every possible damage *en route*, and back to

Richmond. On his information, Lee determined to assault their position on the left bank of the Chickahominy, and this movement began on June 25.

But, meanwhile, events took place in the Shenandoah Valley which had a disastrous effect on the *morale* of the Federals, and brought about the ruin of their military combinations.

We have seen that Banks and Fremont from the north and the west were moving into the Valley, and, in the beginning of May, Milroy was, with the right of Fremont's force, moving towards Staunton. Fremont himself was about to enter the Valley further north and Banks was south of Strasburg.

Jackson now fell on Milroy, near McDowell's, defeated him, and forced him to retire towards Franklin, where he joined Fremont. Jackson, with swiftly moving "*foot cavalry*," as his troops were called, advanced on Banks, who fell back into his works at Strasburg, and, turning to the right, attacked and destroyed a Federal force, under Kenly, at Front Royal, and thence pressed forward against Banks, who, hearing that his flank was thus threatened, retreated in confusion to Winchester, where he stood, but was defeated.

The news of Banks' reverse and that Jackson was on the Potomac, alarmed the people of Washington, and the advisers of the Government insisted on turning back General McDowell, who was already on the march to join McClellan, and ordered him to send a force under Shields into the Valley. Jackson was now in some danger of being cut off from Staunton by the Federals from the west and east; but he rapidly counter-marched, after liberally helping himself to Banks' stores at Strasburg, and interposed between his opponents, and, regaining his base, faced about, beat Fremont at Cross Keys and Shields at Port Republic, and got back to Staunton covered with glory.

With 13,000 men he had, according to General Imboden, defeated an aggregate of 64,000 in thirty-five days, marching

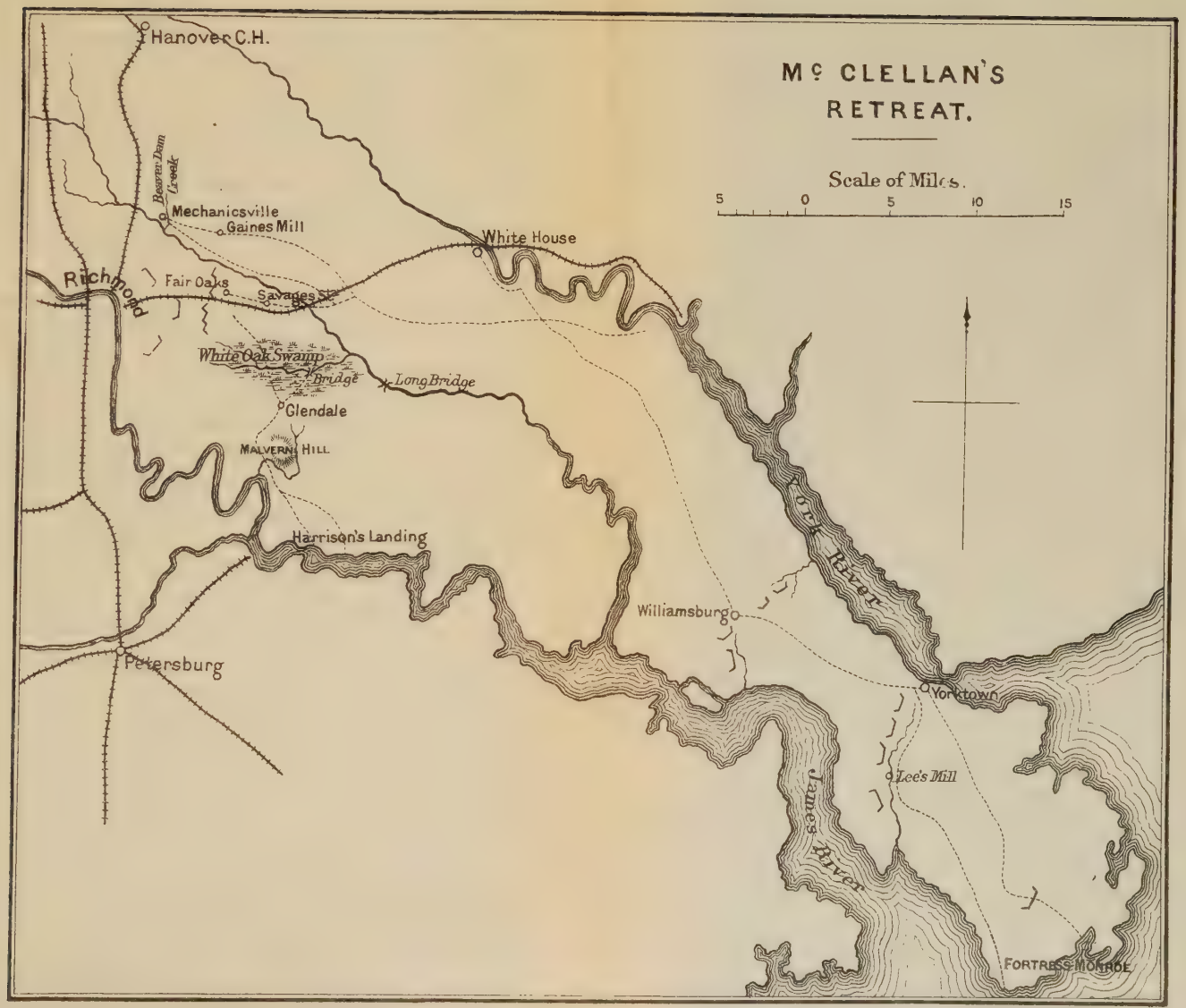
245 miles and winning four desperate battles. These were certainly the most rapid and brilliant operations of war since Napoleon had cut to pieces Blucher's army on the Marne in 1814.

In their strategical consequences they were far-reaching; they not only delivered the Valley—the great magazine of the Southern armies of Virginia—from all hostile troops, they brought about the ruin of McClellan's plans by paralysing McDowell's force. There is no small reason for the statement of the Federal commander-in-chief: "It is my opinion that had the command of General McDowell joined the army of the Potomac in the month of May, by way of Hanover Court House, from Fredericksburg, we would have had Richmond within a week after the junction."

With admirable secresy and with no end of *ruses*, Jackson evacuated the Valley and moved to Ashland to take part in a scheme which Lee proposed against McClellan's right under Porter, north of the Chickahominy. He hoped by turning the enemy's flank to prevent his moving by positions under cover of his heavy guns, to within shelling distance of Richmond.

On June 26, the army of Lee, leaving Magruder to protect Richmond, moved, by Meadows Bridge, across the Chickahominy; after a fight at Mechanicsville, the Federals retired from the strong position of Beaver Dam Creek to Gaines' Mill. Jackson arrived in time to take part in the battle next day, June 27, and, at the same time, Magruder advanced, in a succession of feints, against the Union line south of the Chickahominy. The result of the battle of Gaines' Mill was that Porter was defeated, and only saved by the fact that his retreat was covered by fresh troops from the south of the river.

Lee supposed that McClellan would try to hold his base at White House, and retreat by way of the Peninsula, but the Federal general resolved to make a "strategic movement to his rear" on the James River. He evacuated his magazines at White House, and when Lee saw through his intentions, he



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had had twenty-four hours' start and his plans were well advanced towards execution. He sent 5000 waggons, 2500 head of cattle, and his reserve artillery across the White Oak Swamps, and he guarded the roads through the swamps to protect the passage of his trains and troops from a flank attack during the march. His precautions were all required for he was persistently assailed by Magruder, Longstreet, Hill, and Jackson, at Allen's Farm, Savage Station, Glendale, and Malvern. However, all these rear guard engagements, and especially the last, were well managed, and, by July 2 he was safe under shelter of his gunboats at Harrison's Landing.

Lee, whose army had been exhausted in seven days of constant fighting, did not venture to assault this position, and the Confederates were content with having delivered their capital, and prepared themselves for some new development of the enormous resources of their enemy.

This Federal change of base, from the York to the James, was one of the ablest movements ever made by way of retreat, and during it the army of the Potomac was only saved from disaster by the perfection of its organisation and the personal affection entertained for General McClellan by the officers and men of his army, and the defects of the enemy's staff.

The authorities at Washington, having ruined their General's plan, now cast about to supersede him. General Halleck became their military adviser, and they resolved on forming an army of Virginia on the Rappahannock, composed of the troops of McDowell, Banks, and Fremont, who resigned and whose command was given to Sigel; this army was put under Pope, an officer who had gained some fame on the Mississippi, and whose views and methods were more in accordance with those of the Cabinet than were McClellan's. The latter leader was to be obliged to evacuate the Peninsula, and his corps were to go up the Potomac, and to serve as supports and reserves to General Pope's forces, which were to move on Gordonsville and thence on Richmond. In other words, the army, which was safely on the James, almost

within reach of Richmond, was to return to Acquia and Alexandria, and thence work its way across all kinds of obstacles to the James again. It is not strange that its commander protested, but, as he had to obey, he did his duty by getting his army securely to the several places of embarkation down the Peninsula.

Meanwhile Pope had made himself laughable and execrable by fulminating ridiculous manifestoes on the art of war, and by harassing and maltreating the people of Virginia. He did not display much promptitude, notwithstanding all his bluster, and allowed General T. Jackson to anticipate him by occupying Gordonsville, a decisive strategic point on the way to Richmond, while Lee protected that capital against McClellan. In the beginning of August, at Cedar Mount, Jackson inflicted a sharp blow on Banks, but, being much inferior in force, had to retire behind the Rapidan. When it became obvious to Lee that McClellan's troops were really quitting their position at Harrison's Landing with the object of going north, he sent General Stuart with his cavalry to the aid of Jackson, and soon followed himself to the Rappahannock.

It was now obvious, first, that Pope's army was too strongly posted on this river to be defeated by a front attack, and second, that his numbers were being augmented by the troops from the Peninsula, and that, already superior in numbers to Lee, he would be almost irresistible when joined by all his reinforcements. The only course left to the Confederates was to dislodge him by a flank movement, and with this view to divide their own forces, if necessary:—a dangerous piece of strategy.

Lee, therefore, watched Pope along the river, while Jackson, by a long circuit, was to fall upon his rear at Manassas. It will be observed that turning flanking operations were very popular with Lee and Jackson. They were influenced by the character of their troops and the nature of the country. The men of both armies were comparatively raw levies, highly susceptible to the influence of surprise, and the appearance

of an enemy on their flanks or in their rear was calculated to throw them into disorder. The wooded character of the theatre of war, moreover, facilitated such movements. Jackson, with admirably secresy, moved across the Rappahannock by an almost forgotten ford, pushed on by Salem to Thoroughfare Gap, reached Manassas on the night of August 26, took it, and next day destroyed the great depôt. Pope now hastened north to protect it, but was delayed by one of Jackson's chiefs (Ewell), at Bristoe, and another force sent from Washington to save the magazines was defeated. Jackson, having caused Pope to turn right round, and diverted his army from the direction of Richmond to the Bull Run, had to look sharply after his own safety, for the enemy was more than three to one, and more reinforcements from the army of the Potomac were arriving on the scene. He retired to Sudley's Ford, by roads north and south of the Bull Run, and resolved, by occupying a strong position south of that river, and perpendicular to it, to delay Pope's army and wait for Lee, who would soon come to his aid. We have not time to follow Pope's marchings and countermarchings, or to inquire into the merits of the disputes between him and McDowell and Porter, his subordinates. It is very clear that he quite misunderstood the situation.

His true policy was to obstruct Thoroughfare Gap, the only road by which Lee could reach Jackson quickly, and, having closed this issue, crush Jackson betimes. McDowell could and would have stopped the Gap, but was ordered to Manassas, where Pope hoped (to quote his words), to "bag the whole crowd" of the opposite side. So the Gap was left open. Jackson was attacked on August 28 and 29, but resisted gallantly, and on August 30 Lee took Pope's army in flank and drove it over the Bull Run. Jackson turned Centreville also, September 1, after a combat at Chantilly, but (September 2) Pope, though now joined by two fresh corps of McClellan's army under Sumner and Franklin, fell back through Fairfax Court House on Washington.

The chiefs of a democracy can, like other folk, be as base

in adversity as arrogant in prosperity, and President Lincoln and his "advisers" now begged of McClellan to resume his old position on any terms, reorganise the routed army and save the Federal capital. He consented, but gave a modern example of the conduct which Roman chroniclers ascribed to the ancient heroes of their history—he refused to bargain for his services till he had secured the safety of his country. He took the command; he saved the capital; under him the army of the Potomac again moved ably and fought with daring, but he was soon to experience another truth taught by the same chroniclers, that to trust the wire-pullers of the populace is to "swim with fins of lead."

The fortifications of Washington and the River Potomac were serious obstacles, and accordingly Lee resolved to enter Maryland, and on September 3 he advanced on Leesburg and crossed into Northern territory. He thus drew away the invaders from Virginia; he hoped to get recruits in Maryland, many of the people being well disposed to the South, but in this he was disappointed. He further hoped to pass through the South Mountains, lead the enemy after him, still keeping his communications with the Shenandoah Valley open, by means of Jackson's force, which was to take Harper's Ferry. When he had led the enemy up far enough, he trusted that he might defeat them in a decisive battle, take Washington or Baltimore, and end the war. He was, however, soon anticipated in the South Mountains by McClellan, with very superior forces, and obliged to fall back to the Antietam, where he took up a strong position, and waited till the arrival of Jackson from Harper's Ferry, enabled him to repulse the Federal onslaught about Sharpsburg, September 17. Lee crossed the Potomac near Shepherdstown, and in a few days was safely encamped along the Obequan in the Valley, with headquarters at Winchester.

Stuart now made another "raid" on a remarkable scale. He rode right round the enemy's whole army. With 1800 troopers and four pieces of horse artillery, he crossed the Potomac above Williamsport, marched to Chambersburg, in

Pennsylvania, destroyed the machine shops and a vast amount of military stores, and moved to Frederick City. Evading every effort of the enemy to cut off and destroy him, he reached a ford on the Potomac, north of Leesburg, and recrossed into Virginia with a large number of captured horses, having passed over one hundred miles in forty-eight hours.

When McClellan, in turn, invaded Virginia, Lee simply crossed the Blue Ridge and took up a position in front of him at Culpeper. McClellan had advanced to Warrenton, November 7, when he was abruptly deprived of his command, which was handed over to Burnside.

The new Federal leader resolved, in spite of the lateness of the season, to move to Fredericksburg, cross the river Rappahannock on pontoons, and force his way to Richmond. The result was a bitter disappointment. When he was ready to pass the river, the Confederates were strongly posted on the south bank about Marye's Height. Every desperate assault by the Federals, led by Fighting Joe Hooker and other chiefs, was repulsed, and Burnside, who appears to have lost his head at the close of the desperate battle of Fredericksburg (December 10–15), retired again to the north bank. From every point of view this was a fearful disaster to the invaders, and, early in the new year, Hooker superseded the defeated general.

Lee was still south of the river, above Marye's Hill, in the spring, but his force was not more than 50,000 at most, as Longstreet's troops had been sent south of the James River. Hooker resolved to cross the rivers Rappahannock and Rapidan by Ely and Germania Fords, and, by turning Lee's left, gain the Richmond road, while an attack would be made on the Confederate position at Marye's Hill by Sedgwick. This led to the celebrated battle of Chancellorsville, April 29 and May 5, 1863. This battle was won by another, and the last, of Jackson's flank marches. Hooker entered the Wilderness and constructed formidable works, which Lee watched in front, while Jackson marched through the wooded and intricate country, and fell upon the adversary's unguarded

line in the rear, cutting him off from the road by which he advanced, and compelling him to turn his back to the river, over which, after continuous fighting for days, both Sedgwick and himself had to retire. This Confederate triumph was dearly bought; Jackson was mortally wounded by his own men in mistake, and died a few days later (May 10).

After this great victory Lee resolved to re-enter Northern territory, and again transfer the theatre of war from Virginia to Maryland and Pennsylvania. We have not time to discuss the campaign of Gettysburg, and it does not belong to our theme, although so closely related to it that a few words about its object are necessary. Lee's army was now recruited and enthusiastic, and so elated were the Southern people that they supposed there would be a final victory on Northern soil, followed by a peace. Lee was not opposed to an offensive war. "The Scipio Africanus Policy" seemed to him better for the South than the tactics of Fabius. His theory was that the South ought to keep the enemy as far as possible from the interior, fighting on the frontier and on Federal soil when possible. Thus, the South would be protected from the ravages of the enemy, and the Confederate capital would be safe from danger. As long as the enemy was held at arms' length north of the Rappahannock, Richmond, with her network of railways connecting with every part of the South, was safe, and the Government, undisturbed in their capital, remained a power in the eyes of the world. Another important matter was the question of supplies—always deficient; in these the Confederates were now worse off than ever. When Lee sent to Richmond for rations after the battle of Chancellorsville, the commissary-general is said to have endorsed upon the paper, "If General Lee wishes rations, let him seek them in Pennsylvania."

With a well-equipped and admirably officered army, 68,352 infantry and 10,000 cavalry and artillery, Lee prepared to invade the North. Ewell, with one corps advanced by Chester Gap into the Valley, re-captured Winchester from Milroy, and went on to Martinsburg, followed by Hill, while Long-

street occupied Ashby's and Snicker's Gaps, assisted by Stuart's cavalry. Ewell pushed on to Chambersburg; Hill and Longstreet passed the Potomac at Shepherdstown and Williamsport; Hooker, from the Rappahannock, followed across the Potomac by Leesburg. The Confederates were rapidly moving towards the Susquehanna, when General Meade superseded Hooker as Federal commander and, on June 30, he was approaching Gettysburg. Lee concentrated around this place (July 1) and, after a furious series of attacks for three days on the enemy's position, failed to carry it, and, although Meade's army was too exhausted after one of the bloodiest battles of the century, to attack in turn, he thought it desirable to retreat into Virginia. Meade crossed southward near Leesburg, Lee retired from the Valley by Chester's Gap to Culpeper. It will be seen that the English and French did not more frequently move across the rivers and sierras on the frontiers of Spain and Portugal, during the Peninsular War, than did the hostile armies in Virginia traverse the Potomac and the Blue Ridge during the campaigns which are our subject. Lee put his army into quarters on the south of the Rapidan, closely watched, in October, by the enemy, whose headquarters were in Culpeper.

In this month Lee made a bold move to turn Meade by moving to his own left, on Warrenton, and thence on Manassas on the Federal communications. But this dash failed, as Meade retreated in time, and after a rear guard action at Bristoe, leaving Stuart to pursue to the direction of Centreville, Lee retired again to Culpeper, giving orders to tear up the railway, and put his army behind the Rappahanock. But Meade repaired the railway and followed him up. He fell back behind the Rapidan, and put his troops, who wanted rest badly, into winter quarters: then the enemy made a determined effort to pierce his lines. But, although Meade, from the direction of Germania Ford, did all he could from November 27 to December 1, he did not dare to attack the enormous entrenchments which Lee had improvised. The great system of breastworks was now fully developed, and

Meade declared that he could not carry them with a less loss than 30,000 men.

Thus ended the campaign of 1863 in Virginia, where Lee still held his own ; but the loss of Vicksburg on the Mississippi and the defeat of the Confederates at Chattanooga on the Tennessee, more than counterbalanced all the results of his admirable strategy and brought into prominence Grant and Sherman, whose efficient co-operation with Grant in 1864–65 resulted in the ruin of the South.

We must now hurry over the extraordinary campaign from May to July, 1864, in which Lee, on an inner line constantly moving to his right, foiled every attempt of his opponents to reach Richmond, from the fords of the Rappahannock to Spotsylvania and then to Hanover Town and Cold Harbour and thence to Petersburg.

When Grant was appointed commander-in-chief of the Federal army, he knew that to beat Lee would be no easy task ; but he was even more pertinacious than Masséna himself, and kept pounding away in spite of all kinds of reverses, till he wore Lee out.

As he wrote, the true plan was to " hammer continuously against the armed force of the enemy and his resources, until by mere *attrition*, if by nothing else, there should be nothing left " but submission.

Grant was north of the Rapidan, having got command of Meade's army, which was reinforced to 141,000 men and well supplied ; he crossed it successfully by Germania and other fords above Chancellorsville, May 4 and 5. His plan was to fight Lee, who had about 50,000, between Culpeper and Richmond if he would stand, then to advance straight upon the latter city and invest it from the north and west, thereby cutting its communications in these directions ; and then, crossing the James River above the city, form a junction with the left of Major-General Butler, who, moving with about 30,000 men from Fort Monroe, at the moment when the army of the Potomac crossed the Rapidan, was to occupy City Point, advance thence up the south side

of the James River, and reach a position where the two armies might thus unite.

Grant marched into the Wilderness, thinking that Lee would fall back, but to his amazement the latter moved, with three columns, towards the Wilderness, and offered battle. A desperate combat of an unexampled kind ensued for two days in a dense thicket, from which Grant was only too glad to take advantage of the darkness to move into more open country, and he made a night march, on May 7, to Spotsylvania, harassed by Stuart's dismounted cavalry. When the Northern column reached the Po river at Spotsylvania Court House, they were stopped by the breastworks of the enemy. After manœuvring for a few days, the Federals made a desperate rush on their opponent's position, May 12, but failed, and were obliged to wait for reinforcements. Grant then moved to Hanover Junction on the North Anna, but Lee saw through the design, and on May 23 had anticipated him and repulsed his assault. Meanwhile, Sheridan had made a cavalry raid to within touch of Richmond, and killed Stuart at Yellow Tavern and returned.

Grant on the night of May 26, went towards Hanover Town, preceded by Sheridan's cavalry, and crossed the Pamunkey; but Lee had marched to Cold Harbour, and stopped him again. Both parties threw up vast entrenchments and, after some manœuvring, another great action all along the Confederate line took place on the Chickahominy. After daylight, June 3, the Federals rushed their troops on Lee's front in vain, and with a loss of 13,000 men in half-an-hour. This was a heavy blow. Grant had lost 60,000 men in a month, and was repulsed almost at the very point where McClellan fought two years before.

Both parties remained watching each other till June 12, when the Federals moved by their left flank across the Chickahominy, and passed the river James on pontoons to City Point, and moved on Petersburg.

Butler had sailed from Fort Monroe, and reached Bermuda Hundred, a peninsula opposite City Point, and en-

trenched himself in works to which he was soon confined by General Beauregard from the south. He was as completely shut up, to use Grant's words, "as if he had been in a bottle strongly corked." Grant reached Petersburg June 15; he was held on that day by the local troops; but on June 16 he found that Lee, who had crossed the Potomac at Drury's Bluff, was again in front of him.

Lee began to draw a regular line of earthworks around the city to the east and south, when he was furiously attacked, June 16, 17 and 18, and 21 and 22, all to no purpose. The Federals lost some 8,000 men for nothing, just as the Russians wasted their men in 1877 against the works of Plevna, and they had to adopt the course which the Russians also had to fall back upon, that is, by a regular siege invest the long line of fortifications, and, by extending their own lines westward, cut off their opponents from their resources in the south.

The leaguer of Richmond was singular; an army of 40,000 or 50,000 men, intrenched along a line extending finally over a distance of nearly forty miles, was defending against a force of about thrice its number, a capital more than twenty miles in its rear, and from July of one year till April of the next, the Federals would have ruined the Confederacy at any moment by breaking this line.

We must pass over the incidents of the investment, such as the explosion of the great mine in July. Nor can we dwell on Early's attempt to turn the tables on the Federals by issuing from the Valley, and crossing the Potomac and threatening Washington; nor on the celebrated campaign at the close of the year, when Sheridan took the command of the Unionist troops in the Shenandoah Valley, and, driving the Seceders before him, devastated the country to such an extent that, so far from its being the provision store of Richmond, "a crow that wanted to fly up the valley would have to bring his supplies with him." Nor were these all the misfortunes of the Confederates. By the end of the year 1864, Sherman's operations in Georgia were a heavy pressure

on their almost exhausted resources. Johnston and Hood were driven from the Tennessee to Atlanta, that town was depopulated by Sherman, who then marched almost unresisted to Savannah, and thence, capturing Charleston *en route*, to Goldsborough, in North Carolina, where he threatened Lee's retreat from Virginia.

The position of affairs was desperate, but in February Lee might have still retreated south by Amelia Court House, and, joining Johnston, have prolonged the war in the Gulf States. The civil authorities prevented the execution of this plan, and still the fighting round Richmond continued, and the hail of missiles from the numerous Federal batteries fell upon the half-manned trenches. But by March, Grant's works had extended towards the Southside Railway, from Petersburg to Danville, and, after failing to break the enemy's centre by an attack, March 25th, Lee felt that the final struggle was at hand. He prepared to cope with the Federal movement against the Southern line by taking up a position at Five Forks, and made a fierce assault on the enemy, March 31. He was repulsed, Sheridan took Five Forks, April 1, and seized the Southside Road, and so feeble was the force now defending the works before Petersburg that Grant carried them, April 2.

Lee now had to retreat, and evacuated the place in the night, and moved on Amelia Court House, where he expected a train with provisions, but this train by mistake had passed on to Richmond, and he found himself without supplies.

On the night of April 5 he moved towards Lynchburg, but on his flank was Sheridan's large cavalry force. At Appomattox Court House he found himself in front of an enormous superiority of force, and the surrender of some twenty-five thousand Confederates and their illustrious leader to General Grant, on April 9, closed the trying and terrible series of struggles which had for four years concentrated the attention of the civilised world on the theatre of war in Virginia.

APPENDIX

THE SEVERAL STATES

States which separated from England, 1783.

MASSACHUSETTS.
CONNECTICUT.
NEW HAMPSHIRE.
RHODE ISLAND.
NEW YORK.
NEW JERSEY.
PENNSYLVANIA
DELAWARE.
MARYLAND.
VIRGINIA.
NORTH CAROLINA.
SOUTH CAROLINA.
GEORGIA.

Free Population, 2,614,000.

Confederate States (South).

SOUTH CAROLINA.
MISSISSIPPI.
ALABAMA.
FLORIDA.
GEORGIA.
LOUISIANA.
TEXAS.
TENNESSEE.
NORTH CAROLINA.
ARKANSAS.
EASTERN VIRGINIA.
with Territories of
NEW MEXICO and
ARIZONA.

Inhabitants, 9,000,000, of whom 4,000,000 were slaves.

States of Doubtful Politics.

MISSOURI.
KENTUCKY.
MARYLAND.

Federal States (North).

NEW HAMPSHIRE.
MASSACHUSETTS.
RHODE ISLAND.
CONNECTICUT.
DELAWARE.
NEW YORK.
PENNSYLVANIA.
VERMONT.
COLUMBIA DISTRICT.
OHIO.
INDIANA.
ILLINOIS.
MAINE.
MICHIGAN.
IOWA.
WESTERN VIRGINIA.
WISCONSIN.
CALIFORNIA.
MINNESOTA.
OREGON.
KANSAS.
NEBRASKA
with some new Territories as
NEVADA,
COLORADA.

Inhabitants, 20,000,000.

Hugh Rees, Limited.

Stanford's Geogl Estabt London

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,,	4	Weissenburg
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- Railways worked by the Germans during the War (all provided with telegraphic communication)
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GERMAN CORPS _ VII

FRENCH CORPS _ 7

AN OUTLINE OF THE FRANCO-GERMAN WAR, 1870–71 *

It is not necessary to spend any time detailing the efforts which, under Napoleon III., the French made to recover the military pre-eminence which was for a while lost at Waterloo. As a result of the campaigns in the Crimea and Italy, they seemed to be again in the vanguard of glory. But Sadowa shocked them by the spectacle of the distinguished capacity of the Prussians for war, and, on somewhat flimsy pretexts, after a few years of subtle and unsuccessful diplomacy, they threw down the gauntlet, July 19, 1870. Not only Prussia and Northern Germany, but all Germans were ready for the strife.

They resolved to anticipate the French, whose plans and whose history, and, indeed, whose war-cries indicated a prompt initiative.

Therefore, the Germans concentrated on the Rhine with a speed which the use of railways rendered quicker than that celebrated operation which brought the legions of Napoleon from the Channel to the Danube. We need not here enter into the causes of the slowness and the confusion and of the relative inefficiency of the French mobilisation, and of the absolute perfection of the system which had been elaborated by Von Moltke and Von Roon. Not that the French were really very bad in all respects, as compared with former experiences at the commencement of a great number of campaigns, but that they lagged far behind their adversaries. In peace to be prepared for war in every particular,

* A lecture at Woolwich, republished by permission of the Committee of the Royal Artillery Institution.

in men, material, and in mobility, and in facility of supply was with the authorities of Prussia not merely a classical phrase. It was the business of their lives.

Thus, then, in the early days of August, ready to be attacked, three German armies were along the Rhine from Cologne to the Lauter with the heads of their columns cautiously looking towards the frontier lest perchance the enemy, leaving a reserve at Metz, and accumulating a great mass of troops near Strasburg, might cross the river at Maxau, and having interposed between South Germany and North Germany, compel the armies to form front to flank on the Maine. But this danger soon passed away. It was obvious after the *baptême de feu* at Saarbrücken, August 2, that the French staff was confused in intelligence and lacking in energy and enterprise, as well as deceived with regard to the nation's readiness.

Then commenced a series of operations by which, in seven months, the French, in spite of awful sacrifices and romantic and desperate devotion, were crushed as by a ruthless and resistless fate.

A glance at a map will show that all the French forces east of the Moselle were in danger of being cut off from their base, after forming on a line parallel to their communications, once their foes resolved to operate southwards from a line roughly drawn from Sierck to Weissemburg. On the map it can be seen exactly how things stood after the skirmish of Weissemburg. This was the posture of affairs, August 5, after the German success at the last named position. The First German Army (Von Steinmetz), with the VII. corps on its right and the VIII. on its left and the I. behind, was about Bettingen and Lebach and St. Wendel and Birkenfeld; the Second Army (Prince Frederick Charles), with the III. corps on its right at Neunkirchen, and the IV. on its left at Einod and Homburg, extended backwards, thus: Guard about Landshut, X. at Cusel, IX. at Otterberg, XII. at Enkenbach, with the II. still further behind. The 5th and 6th cavalry divisions were in front of both armies, as were some dragoons. On the left

of the line was the Third Army (Crown Prince of Prussia), with the V. near Wöerth, the XI. at Sulz, II. Bavarians at Lembach, I. Bavarians and 4th cavalry south of Weissemburg, and the Wurtemburg and Baden divisions east of Sulz, but the leading division of VI. had not got further than Landau, nor was the 2nd cavalry division yet available.

The French were scattered, and the Vosges were between the sections of their army, nor was there any quickness of reciprocal support among the leaders of the corps. "Marching to the cannon" seemed to be a forgotten motto among them, since it was vainly urged upon Grouchy at Sart à Walhain.

The following is roughly how the French were situated: the 6th corps was coming from Chalons to Metz, the Guard, a little to the east of Metz; the 2nd about Forbach, the 3rd about St. Avold; the 5th about Bitsch, with a division going towards Woerth; the 7th collecting together about Belfort, with a division also going north to Wöerth, and MacMahon with the 1st corps was at Wöerth preparing to stop the advance of the German Third Army. Simultaneously, on August 6, the French left and right under Frossard and MacMahon respectively were beaten by the First Army, assisted by the III. corps of the Second Army at Spicheren, and by the Third Army at Woerth.

Not only were the French beaten at both these engagements which, by rolling up both their flanks, and giving the Germans enormous moral force, were disastrous enough; but they allowed themselves to be paralysed by defeat. Their leaders could not produce any practical scheme other than falling back despairingly without detaining the invader by any other method than the resistance of a few fortresses. Not only so, but as the mass of the Second German Army was near at hand, MacMahon feared lest it might reach the Moselle before him, and gave up all hopes of defending the river, and retired by Neufchateau on Chalons, whither came the 1st, 5th, and 7th corps (the latter by Troyes and Paris), and ultimately a new corps, the 12th.

Thus, as the remaining French corps, 2, 3, 4, and 6, and Guard grouped round Metz, abandoning the line of the Nied, it was only necessary for the Germans to move on to the Moselle, cross it, and seize the roads connecting Metz with the Meuse before Bazaine, who had now the chief command on the Moselle under the Emperor, reached the latter river, and they would interpose between the sections of the hostile army which they could then proceed to destroy in detail. Historical parallels are often deceptive, but it must be granted that the Russians in 1812 acted more wisely in defending their country than the French in 1870. Napoleon advanced with numbers very similar to the German host in the latter year. He, too, had a central army corresponding strategically to the Second German Army, and a right wing under Schwartzenburg, and a left wing under MacDonald corresponding to the First and Third Armies. The relative force of the Russians was equal in numbers to the French force in 1870, but Barclay de Tolly did not allow himself to be shut up in the entrenched camp at Drissa, he left a good detaining force on that line, and retired to join Bagrathion, and both combined at Smolensko, and falling back towards their capital, Moscow, hit Napoleon hard at Borodino. Then Kutusoff, when the French entered Moscow, put himself parallel to the French line of communications and kept harassing them during their retreat while the northern and southern armies aimed at a decisive point in their line, the Beresina, and almost destroyed the remnant of their army. But while the Russians abandoned territory without any hesitation at the dictates of strategy, the French commanders held on too long to Alsace and Lorraine—more afraid of the criticisms of the Press and the politicians of Paris than of the hosts of the invader. Another historical comparison is between 1870 and 1806. When Napoleon passed the Thüringer Wald he pushed ahead with much more vigour than was displayed by the Germans after their successes on August 6. He went straight to his object; they paused; made methodical wheels; waited on the reports of their cavalry, and by feeling their way, as it were, instead

of prompt and ready movement gave a chance to the enemy to recover himself sufficiently to block their passage of the Moselle, if not to inflict some disaster upon them, or even break their line for a while before they reached this river. But, having lost all touch with MacMahon, the Third German Army crossed the Vosges practically unopposed, leaving behind untaken Bitsch and Phalsburg, and sending Von Werder with the Baden division, which was to be reinforced from Germany, to invest Strasburg. The Crown Prince pressed on to Nancy and crossed the Moselle south of that town unopposed, August 15. Meanwhile the First Army (VII. and I. corps) marching from the Saar westward at Borny engaged, with the assistance of IX., Bazaine's army as it was in the act of retreating through Metz westward. Any such tactical success as led the Emperor to congratulate the wounded old soldier on having "broken the charm" was delusive. Turning what ought to have been a rear-guard action only into a battle was worse in its results than a Pyrrhic victory. The French lost time and their true bourn, the Meuse. The Germans hurried across the Moselle. Why describe the oft-told tale of the battles of August 16 and August 18? We deal with their results. On the 16th a portion of the Second German Army compelled Bazaine to form front to flank on the road from Metz to Verdun and kept him there. On the 18th he fought with his back to Metz and the First and Second Armies beat him and shut his five corps up therein, and having invested him with the I., VII., VIII., IX., and X. corps, and the 1st and 3rd cavalry divisions, they kept the II. and III. corps near at hand to be used as occasion required, and sent all their other troops towards Paris across the Meuse. Could Bazaine have avoided being thus enclosed? Certainly:—by moving westwards sooner, by having formed some clear plan sooner, and by not fighting the battle of Borny. Was Bazaine a traitor to France, though true to the Empire? This it is not my province to discuss. Could he have broken out by a great sortie? This is the subject of perpetual dispute. An ingenious plan is

set forth by Sir E. Hamley whereby he could have fallen on the German communications even more smartly and effectively than Napoleon I. proposed to do after his defeat at Arcis-sur-Aube. On the other hand the late Major Adams says that in Metz by keeping such a large portion of the Germans employed he was doing his country more service than he could have possibly rendered by operations in the open. And certain it is that the longer the siege could be protracted the greater the chance for France to re-organise armies, and perchance deliver herself from the grasp of her formidable foe. Moreover, gentlemen who are so ready to suggest sorties should remember that once a town is invested a sortie is a very difficult and troublesome and deadly matter. With modern arms a front attack is admittedly a desperate enterprise; but how can an army coming out of a fortress make a flank attack against encircling enemies? Therefore, as a countrymen of mine who was recently lecturing on Tactics said, "If a general wants to get out of a fortress he should never allow himself to be shut in." By August 20 the investing forces at Metz under the Prince Frederick Charles had settled down to their work. 200,000 men besieged 173,000 at least. A newly organised army, the Fourth, under the Crown Prince of Saxony, composed of the 5th and 6th cavalry divisions, and the XII. Guard and IV. corps was moving to the Meuse south of Verdun, and the Prussian Crown Prince had brought his army across that river south of Commercy. But it was not till August 25 that the commanders of these armies learned definitely what MacMahon, who was likely to prove a serious obstacle to their advance on Paris, proposed to do.

He had brought his troops at the camp of Chalons into a fairly satisfactory state of organisation and discipline, considering the very deplorable condition into which they fell after the defeat at Woerth and during their movement westward. He had got rid of the worse recruits of the Garde Mobile. He had 140,000 men and 400 guns. With such a force Napoleon I. would have been quite ready to manœuvre

in Champagne as to drive 250,000 Teutons backward to their soil. But Napoleon III. was only a parody of his uncle, and his operations were based rather on the caprices of politicians at Paris than on the lessons of history.

It would not have appeared strange to Von Moltke and Von Blumenthal if MacMahon had stood either at Troyes or west of the Yonne on the flank of their road to Paris and with all the resources of southern and south-western France behind him for recruiting and supply. In such a position he would have rendered it impossible for Paris to be besieged till he was beaten, and, even if beaten, he would not have been ruined. He could with a secure base have moved by railroads eastwards and put himself dangerously near the German line of communication. Or he could have stood at Rheims or somewhere near, and there, covered by the Marne and Aisne, he could have connected his right with the commercial and industrial centres and the fortifications of Northern France, and threatened the Germans if they continued their advance. But that he should march by Rheims to Rethel and thence by Vouziers on Dun and Stenay with the object of assisting Bazaine to break out of Metz, especially as the Belgian frontier was so near, in the event of a defeat, appeared incredible. Suppose his army had the qualities of perfect organisation, discipline, and marching power which would have enabled it to make a flank march rapidly to the Meuse, it could have been met at Damvillers by the II. and III. corps, which would have stopped it, joined by the Fourth Army, till the Third Army could march up and take part in a decisive action. When the Germans knew that MacMahon was marching to the Meuse they immediately set about stopping him, August 25. At this date they were thus located: The Fourth Army from Dombasle to La Heycourt, the front of the Third Army from Clermont by Rosay to Vitry, with the I. Bavarians behind at Bar-le-Duc and the VI. corps at Vassy. Both Armies were preceded by a great host of cavalry—5th, 6th, 4th and 2nd divisions from right to left, not to mention the cavalry of the

several corps. The whole immediately turned north, and without the least hitch in regard to their supply.

MacMahon moved eastwards slowly on Stonne and Buzancy and Grand Pré, with his cavalry on the flank and the inner flank, in striking contrast with the enterprising horsemen of the enemy. By August 27 the roads to the Meuse were occupied by the German cavalry, and Dun and Staney by the XII. corps; manifestly it was absurd for the French to think of going on now with the Fourth Army in front and the Third Army at Suippe, St. Menehould and Clermont, and thus threatening with rapid strides their right flank and rear. But, after a few retrograde steps, the French staff and Emperor, infirm of purpose, went on by impulse from Paris to their doom. They tried to wend their way eastward by Mouzon and Remilly and thence by Carignan to the aid of Bazaine, who announced his intention of breaking out, but they were practically hemmed in against the bend of the Meuse at Sedan and the Belgian frontier.

On August 27 there had been still several alternatives open to the ill-fated Army. It could have retired safely to Rethel and thence north or to Paris without much inconvenience. By the 30th, after the engagement at Beaumont, in which the IV. corps, aided by Saxons and Bavarians, surprised and defeated the 5th and parts of the 7th and 12th French corps, the only chance was to retreat if possible to Mezières, and thence either north-west or south-west, with the assistance of a new corps, 13th, under Vinoy, which had reached that place. But MacMahon hesitated on August 31, while the Germans pushed ahead still further. By the evening they were thus situated:—Third Army—Dom Mesnil, Donchery, Chehery, Raucourt, Remilly. Fourth Army—Mouzon, Douzy, Carignan, and they were thus in a position, after the most celebrated strategic wheel recorded in history, either to drive the French into neutral territory or compel them to surrender. To repeat the story of the stupendous disaster of Sedan would be to weary by a more than thrice-told tale. The French Empire fell, and leaving the XI. and I. Bavarian corps

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GERMAN CORPS - VII

FRENCH CORPS - 7

for a while to look after their 84,000 prisoners, the German warriors forthwith marched towards Paris.

The new Government, which was established in that capital September 4, resolved to yield neither territory nor fortress. Peace was therefore out of the question. And, however disappointed the Germans might be at the prolongation of the struggle in spite of their great victories, they had no option but to undertake the siege of Paris, into which Vinoy's corps managed to retreat in time, and where Ducrôt was forming a new corps (14th), and for the subsistence of which the Government of National Defence was making prodigious efforts.

Had the new Republican Government any reasonable prospect of retrieving the disasters of the Empire? The answer to this question depends on a consideration of the whole strategic situation at this period. A French field army did not exist. MacMahon's force had capitulated. Bazaine's was invested, and as his sortie, August 31 and September 1, commonly known as the battle of Noisseville, had resulted in a repulse, he had absolutely no hope of escape—no other sortie could have the least practical effect. His capitulation was only a question of time. There were not quite 30,000 left of all the Imperial troops for the service of the new Government. On the other hand, 240,000 Germans were marching on the capital, 240,000 were about Metz, 100,000 held the captured frontier territory, and were gradually surrounding and taking all the fortresses between the Rhine and Paris. Strasburg was about to fall, and surrendered to Von Werder September 27; 160,000 men of the Landwehr were arriving gradually on the theatre of war, and behind was the Fatherland, now an armed nation, not of raw recruits merely, full of ill-directed enthusiasm, but trained soldiers accustomed to discipline and led by officers worthy of being obeyed. All this gigantic military machine was directed by a Government in which the people of all ranks had the utmost confidence. Harmony, one mind, one idea animated the mass from princes to peasants. Thus, and thus

only can a people rise to the zenith of national greatness. Yet the French had hope in spite of the loss of their armies and the obvious defects of their newly improvised political system. Their resolution to exhaust the resources of their country before yielding any portion of its provinces to the invader was sublime. The determination of the citizens of Paris—supposed to be the most frivolous of mankind—to submit to the horrors of a prolonged siege, more than atoned for their previous devotion to luxury. How could they beat the Germans? They had a large amount of military material in the arsenals, and they could readily manufacture more; they had enormous levies of men; hundreds of thousands responded to the call to arms; the fleet could supply gunners; the Garde Mobile and the National Guard could be drilled while the fortresses detained the enemy; the credit of the nation was unlimited and would result in an ample supply of arms and horses from other countries. Moreover, Bazaine still held out in Metz. As long as he maintained his position the First and Second German Armies were kept chained to the Moselle. Then, Paris was an enormous fortress which could not be carried by assault: to destroy it by bombardment would for a long time be quite impossible, and as it was provisioned for months, it would detain 200,000 more Germans. Again, *francs-tireurs* could so harass the Germans as to keep the Etappen troops on the line of communications constantly occupied. Again, the North of France abounds in fortresses—places of refuge for *francs-tireurs*, and very convenient for the purpose of raising and drilling new troops—but, above all, it was for a long time beyond the powers of the Germans to occupy much of *the territory south of the Strasburg-Paris Railway*. Until Strasburg was taken they could not even enter Burgundy, and until Metz fell they could only send feeble detachments in the direction of the Loire.

Now, a glance at the map will show that the new defensive hosts could draw upon the greater part and the richer part of France. There was a long line of country in their occupa-

tion extending from Le Mans by Orleans along the course of the Loire, as far as the mountains of the Côte d'Or to the plateau of Langres and to the Vosges. On this line, which touched throughout at important strategic positions the communications of the advancing German forces, armies could be united which would find powerful assistance from the extensive country in their rear and secure points of support in the nature of the ground. The French were further deluded into expecting impossibilities by recalling the events of 1792–3. A new Republic they thought would be as fatal to Von Moltke as the old one was to the Duke of Brunswick. But the adoption of conscription has put an end to the possibility of a triumphant *levée en masse*. The armies of the Coalition in the Revolutionary wars were recruited with difficulty and, necessarily few in number, and led by old-fashioned methodical generals, they could not cope with the fanatic hordes of France directed by brilliant and ruthless desperadoes. But things had changed since then; no amount of money, no numbers hastily equipped and badly drilled were of any avail against a perfectly drilled and thoroughly prepared nation. Infantry might be trained in a few months to make some stand, but where were officers to be procured? how could cavalry and efficient gunners be improvised? It is true that some of the Generals whose operations fill up the history of the war after Sedan were very able men, and that everything eloquence could do was done by Gambetta. Masses of troops were repeatedly thrown with strategic accuracy upon decisive spots, but in battle, even when very superior in number to the enemy, the French army resembled for the most part a flock of sheep being driven against a wolf, and we have authority for saying, "It never troubles the wolf how many the sheep be." These raw levies did not lack courage, nor did they in the severe weather of January, 1871, when half fed and badly clad, lack the more heroic virtue of patient endurance of the most appalling distress—only to be rivalled by the sufferings of their countrymen during the retreat from Moscow. But their officers were not

fit to be corporals in a second-rate regiment of volunteers; when engaged they manifestly did not understand their business, and the unrelenting sword of the practised soldier everywhere destroyed them.

As the notion that a nation can be adequately defended by armies hastily raised and led from their hearths to the field is not yet altogether dead among ourselves, it is well to follow the leading features of what may be called Gambetta's operations.

The few little skirmishes which occurred as the Germans proceeded to surround Paris may well be passed over, nor can I enter into any details of the siege. Suffice it to say, broadly, that the Fourth Army was on the north and the Third on the south of the investing line. The siege dates from September 19.

At the same time cavalry were sent in the direction of Nantes, Evreux, Chartres, and early in October the 4th cavalry division began to be pressed at Toury by forces coming from the direction of Orleans. This caused the formation of a new army detachment, consisting of the I. Bavarian corps, the 22nd infantry division, and the 2nd and 4th cavalry divisions, under the command of Von der Tann, who was to discover the plans of the new French Armies of the Loire.

The provinces were determined to relieve Paris if it held out long enough, and Gambetta left the capital in a balloon, and, arriving at Tours, October 9, immediately transformed official torpor and the routine of red-tape into a feverish state of patriotic activity. But General de la Motte Rouge, in command of the new 15th French corps, in vain tried to stop Von der Tann in his advance on Orleans. The Bavarian chief took this town October 11, and Chateaudun, October 19.

General D'Aurelle de Paladines was now put in command, and he had a difficult task to turn the tens of thousands of men who thronged the camps south of the Loire into soldiers. He might have done so effectively if he had had time, and

had not been thwarted by political exigencies and democratic impatience. As it was he did very well indeed, all things considered. The only other case in which so large an army was improvised in the very midst of a war was in America, when, after the disaster of the first battle of the Bull Run, General McClellan created the Northern Army of the Potomac—but he did not move his troops into action for more than six months, whereas D'Aurelle's army was put in motion against Von der Tann before it had received a month's training. The Germans, seeing themselves threatened by vastly superior forces, evacuated Orleans, November 8, and retired north, but were beaten at Coulmiers, November 9, and retreated by a night march to Toury, where they were reinforced by the 17th division, under the Grand Duke of Mecklenburg-Schwerin.

Undoubtedly this was a very critical time in the history of the war, and if Metz had only held out a few weeks longer, so many French troops would have moved on the capital and on the German lines of communication that the abandonment of the siege of Paris would have been inevitable, and some new plans of campaign would have had to be considered. But when Bazaine surrendered, October 27, the enormous number of 173,000 men and their arms and stores, the First and Second Armies were set free to take off the strain from their hard-worked friends at Paris, and, by sending corps north-west, south-west, and south-east, complete the conquest of France.

The surrender of Metz caused a storm of invective against Bazaine, but instead of dispiriting Gambetta it only redoubled his energy. Beyond a doubt he had that indescribable faculty—that genius which moulds the masses to its will. On November 2 he decreed the enrolment of all males from twenty to forty years of age, and, with the object of training them, he established camps of instruction capable of receiving from 60,000 to 250,000 men at St. Omer, Cherbourg, La Rochelle, Bordeaux, Toulouse, Montpelier, Marseilles, Lyons, Clermont-Farrand, Nevers, and Conlie. The generals, since

practically the whole of the Regular Army was now in captivity in Germany, were old officers already retired, as De la Motte Rouge and D'Aurelle de Paladines, officers of the fleet, like Admiral Jauréguiberry, or junior officers re-called from Africa, like Faidherbe. Not only had D'Aurelle an army of the 15th, 16th, 17th, 18th, 19th, 20th, and 21st corps, all recently formed, and some of them in a very fair state already, along the Loire at the end of November, but about Amiens there was an army of some 25,000 men, the 22nd and 23rd corps, under Faidherbe, and in the eastern theatre about Dijon, and south of it, some 35,000 men under Garibaldi, Cremer, and other leaders.

General Von Werder, after the capture of Strasburg, was ordered to disperse all free bands in the Vosges, and to advance into the Côte d'Or and occupy Dijon, and besiege Belfort. He put himself at the head of the XIV. corps, composed of his old Baden division, and a mixed infantry division, and moved to Epinal by October 12, and thence on Vesoul, and seized Gray in the end of the month, so as to command the plateau of Langres, and thus protect the Prince Frederick Charles when he was marching from Metz by Troyes to the Loire. He further defeated Garibaldi at Dijon, which he made his headquarters in November, and also General Cremer, at Nuits, and invested, November 3, Belfort, a very strong fortress, the key of the historic Gap of Burgundy. He, therefore, had complete military occupation of this district in December.

As the success or failure of Gambetta's plans depended altogether on the manner in which the German Staff used the forces which were at their disposal after Bazaine's capitulation, we must return to the several corps of the First and Second Armies. Of these, II. corps joined the besiegers at Paris, the VII. corps invested Thionville and garrisoned Metz. The I. and VIII. and the 3rd cavalry division, all under Von Manteuffel, advanced westward, defeated Faidherbe at Amiens, November 27, and occupied that town, advanced on Rouen, and took it; won another

battle, December 23, against Faidherbe at the Hallue river near Amiens, and held the lines of the Somme and the Lower Seine, at the same time investing Peronne, and repulsing every movement from the north in the direction of Paris. The total strength of this army in the north-western theatre was 42,000 men and 120 guns, and it must be admitted that its resources and activity were fully tested by the very able Frenchman who opposed it.

To return to the Loire; after some operations westward on the Chateaudun line, the Grand Duke of Mecklenburg-Schwerin, with a new corps, XIV. (formed of the 17th and 22nd infantry divisions), and 4th and 6th cavalry divisions, in all 45,000 men and 200 guns, moved towards Beaugency to co-operate with the army of the Prince Frederick Charles, which, having left Metz, November 2, was moving by forced marches to the Loire, IX. and 1st cavalry division on right, X. on left, and III. in rear of the centre. As we have seen, it was absolutely essential to block the way to Paris against Gambetta's multitudinous recruits. This army reached the line Montierender-Joinville-Neuchatel, November 7, and Troyes to Chaumont, November 8, Fontainbleau to Nemours, November 18, and was at Pithiviers, Joigny, and Montargis, a few days later. After some skirmishes, it appeared clear that a great plan for shaking off the Germans was in progress. With his right D'Aurelle proposed to occupy the army of the Prince Frederick, which included 60,000 men and 275 guns, and move forward his left by Chateaudun and Chartres, simultaneously with which movements a great sortie was to take place from Paris. The large French force was on the right bank of the Loire, in part concealed from the reconnaissances of the Germans by the extensive forests of Orleans and Marchenoir.

The German Prince, under whose command were the Duke of Mecklenburg-Schwerin and Von der Tann, was very cautious, took care not to commit himself too much, would not be drawn even in pursuit into the forest, and spread over a great extent of front, remembering that he was protecting

the investment and not acting independently. All German officers were mindful of the fact that each was a subordinate part of a great whole.

The so-called battles of Orleans were fought on a front of about 27⅔ English miles from Beaune la Rolande to Chateaudun. At the first-named place a desperate fight took place between the 18th and 20th French Corps and the X., and some of the III., November 28, but all the French assaults were repulsed. Gambetta determined to renew the struggle, December 1, in consequence of information from Paris that Trochu's great sortie on November 30 had broken the German line at Brie and Champigny. Now or never was France to be delivered. On December 2 a series of struggles occurred on the French left, the 16th and 17th attacking the XIV. and Bavarians at Loigny and Poupry, but the Germans were again victorious. Now they converged on Orleans, while General D'Aurelle drew back his centre and exposed his wings to the danger of separation. Perhaps he hoped to draw the enemy towards his centre and then send one strong wing, say the left, which was behind the forest of Marchenoir, on to Paris. D'Aurelle's plan was not to defend Orleans, but Gambetta ordered its defence; this was not in accordance with the General's scheme, and it stopped his retreat and spoiled the advance of a wing. The Germans pressed on concentrically into Orleans, December 4 and 5, and the huge French army was divided into two distinct forces, one going south-west and the other south-east, the former west of the Loire towards Vendôme, and the latter southwards across the Loire towards Bourges. At the same time Trochu's sortie proved abortive: notwithstanding all his efforts, November 30 to December 3, he could gain no further ground, and his troops had to fall back into the fortress.

But though bitterly disappointed, the activity of the French was far from exhausted, and their troops in the Loire district were still most formidable in numbers. Chanzy now commanded the left, and Bourbaki the right wing, as D'Aurelle was dismissed, and the former leader—a man of high military

abilities—soon began to be very troublesome. First he fought for several days about Beaugency, December 8 and 10, and then he disappeared altogether from the German front, and General Voigt-Rhetz, of the X. corps, after occupying Blois, discovered that not only had the seat of government been transferred to Bordeaux, but that Chanzy had retreated to Vendôme and had a new base at Le Mans. This was decidedly a very efficient movement. The wearied Germans now turned towards the Loire and fought there from Vendôme to Morée against Chanzy's army, but it was clearly his duty to draw them westward, and leaving the Duke of Mecklenburg-Schwerin and Voigt-Rhetz to look after Chanzy, Prince Frederick Charles returned to Orleans to watch events.

It will be apparent that whatever may be thought of the tactics, these operations are a series of strategical combinations, most varied, most interesting, and most instructive. But the result of all was that for a while both armies were quite exhausted; the French, as might have been expected from their hasty organisation, were already in a deplorable condition, deserting in crowds, large detachments of them without arms, and all most insufficiently clad and fed. On the road from Orleans to Blois alone, more than 6000 French wounded, who had been left behind entirely without doctors, were found and attended to by the Germans.

As for the other army, it is hard to find words to express our admiration sufficiently clearly at their masterly management and perfect system of supply under such ever-shifting conditions of warfare. But, of course, there is a limit to human endurance, and it would be well if critics of military affairs remembered that even as the speed of a horseman is limited by the powers of his horse, so the manœuvres of a General are limited by the physical powers of the men, and the German troops had also suffered from the unceasing fighting and winter bivouacking, and their boots were worn out with marching. Therefore, from December 16, 1870, to January 6, 1871, nothing but reconnaissances took place; the iron grip was tightening round Paris, but no very serious action occurred.

We are now approaching the last scenes of this eventful history. In the north Faidherbe tried again to co-operate with a sortie from Paris, which took place on January 19; but the V. corps repulsed the sortie, and Von Gœben, after a very able flank, finally defeated Faidherbe at St. Quentin on the same day.

The campaigns against Chanzy and Bourbaki require somewhat more detailed attention. The new strategical plan of Gambetta was to send Bourbaki's Army eastward, either to attack the principal line of communications of the Germans around Paris by the gap between the Army of Frederick Charles and Von Werder's corps, or to move still further east and fall upon the latter commander, and raise the siege of Belfort. Probably it was thought the Prince would so far comply with this movement as to send a portion of his army after Bourbaki, and then Chanzy could move rapidly on Paris from Le Mans, and give a hand to the above-mentioned sortie from the direction of Mount Valerien: with this view de Chanzy's Army was reinforced by the levies of Brittany. It was supposed that Bourbaki could break in upon the railway line from Paris to Strasburg, as well as raise the siege of Belfort, and it was also proposed to make an inroad into Germany by Delle, and thus turn the tables on the invaders. These ideas were far from bad, and as each French army was about 150,000 strong it must be admitted that the Germans were in no small difficulty. But they met the case with the utmost promptitude and skill, and the French designs failed, not because of their inherent worthlessness, but because of the inferior instruments to which they were entrusted. The plan was artistic: the execution was clumsy. As Colonel Vial says: "The schemes for campaigns were drawn up without reference to the composition of the armies. The troops were young, inexperienced, and not solidly organised. Their *cadres* were unsatisfactory. The provisions were not abundant, or at least were lacking at the proper time and moment, a proper commissariat had not been provided. These troops were contending against forces much superior in training, organisation,

and every military quality—forces in whose numbers non-effectives were not included; forces provided with artillery far better in every respect than the French, and with a staff organisation and general command of extraordinary perfection and ability."

The German authorities were by no means ignorant of the new strategic combinations, and thus met them. The Army of Prince Frederick Charles turned to face Chanzy, leaving only one division of the IX. corps at Orleans to observe a French force at Nevers, and the gap between the Prince and Von Werder was forthwith filled by the VII. from Metz and the II. from Paris, which were put under Von Manteuffel, who handed over the North-Western Army to Von Gœben.

Early in January 73,000 Germans, with 308 guns, went westward towards Le Mans. The XIII. corps moved from Chartres, the X. from Vendôme, and the III. from Beaugency, part of the IX. from Orleans, and by January 6 began, about the forest of Vendôme, a series of combats which lasted till January 12, when on the river Huisne the western French forces were completely defeated, and retired on Alençon and Laval and tried to recover themselves; but as the fall of Paris was imminent, and certain to take place before the defeated and demoralised corps of Chanzy could reach it, the war was practically over in this part of the theatre. The fighting in this district is particularly instructive to Englishmen, as by its enclosures, numerous villages, thickets, and country houses, in many respects it resembles their own country. The cold was intense, and the roads so slippery that the principal officers, including Prince Frederick Charles, had frequently to walk.

We now turn to the eastern theatre. When Von Werder distinctly understood the nature and the strength of Bourbaki's movement, he informed his chiefs of his perilous condition, but was ordered to hold out near Belfort at all costs, and that he would soon be relieved. Accordingly, on December 27 he abandoned Dijon, and retired by forced

marches on Vesoul to cover the siege of Belfort. Bourbaki now reached Besançon with the 15th, 18th, and 20th corps, and was there joined by a new corps, the 24th. He left to Garibaldi, at Dijon, the care of his line of communications. Realising his danger, but calm and resolute, Von Werder now moved from Vesoul, and resolved to make a stand against the French on the little river Lisaine, with his back to Belfort. He, therefore, made a celebrated flank march, January 9–11, and, in order to check the French and gain time to establish himself securely, he boldly fell upon the heads of two hostile corps at Villersexel, repulsed them, and continued his movement undisturbed to the Lisaine. This was a brilliant and oft-quoted feat of arms. He had three days to fortify his position and equip it in part with siege guns from Belfort, and he made such good use of his time that when Bourbaki arrived in front of the river, January 15, his 43,000 men held out for three days steadily against the repeated assaults of some 150,000. After trying every part of the German line from Frahier to Delle, a distance of nearly fourteen miles, in vain, Bourbaki had to retreat in despair on January 18. Well might the German Emperor in a special manner emphasise his admiration for the officers and men who had made such a stand, under most trying circumstances; for three nights many of them slept on the ground in twenty-five degrees of frost. Not only did Von Werder begin to pursue on January 19, but the heads of General Manteuffel's columns began to appear in a very threatening manner on the French lines of communication.

Everything went wrong with the French in these operations, while no difficulty was too arduous for their foes. The principal use of a great superiority in force is to be able to make turning movements with impunity, and yet the French attack was in front.

If any lesson of the utter folly of relying on improvised armies, however brave, in really trying crises were needed, it was to be found here. The marches of the French were heartrending; of course, the commissariat broke down; the

troops were half-famished for want of food, without shoes, and starved by the cold; the few staff officers knowing nothing, were continually giving wrong orders, and artillery and trains were in hopeless confusion. For example: on the day of the first attack on Von Werder, when every minute was of value, the division of Cremer, when marching to take the Germans in rear, was actually cut in two by the 18th corps, of 30,000 men and 72 guns, marching on Chagey. This division suffered terribly. In order to reach Lure it had marched (each man carrying sixty lbs.) forty miles in thirty-six hours without either officer or man having anything to eat. In their night bivouacs their sufferings were almost a repetition of the scenes between Smolensko and Wilna in the winter of 1812.

With the object of delivering Von Werder from the clutches of Bourbaki, the II. and VII. corps collected, January 12, at Chatillon, under Manteuffel; they had to cross the hills into the valley which runs north and south between the Côte d'Or and the Vosges and Jura Mountains. Dijon and Langres, on the flanks, were occupied by the enemy, and the main roads were thus closed, so that the passage had to be effected by Selongey, Prauthoy, and Longueau. A brigade was detached to Dijon under Kettler to keep Garibaldi occupied. This was easily done—indeed, the Italian chief was of very little service throughout. The roads were very bad, especially for the movement of artillery, but large working parties dragged the guns up the inclines, and by January 18 the two corps, 50,000 strong, had passed the mountains. Then Manteuffel learned of Von Werder's victory, and immediately wheeled to the right, marched one corps, VII., on Besançon, and the other, II., on Dôle, which was reached February 21, and where 150 railway waggons, loaded with provisions, forage, and clothing for the French, were taken. From Dôle the II. Corps crossed the Doubs, and rapidly marched to seize the defiles along the Swiss frontier, and thus hem in their victim. The VII. Corps marched close past Besançon and occupied Dampierre. At

Quingey, the railway from Besançon by Lons le Saulnier to Lyons was interrupted, and on January 25 the road from Besançon to Lyons—Bourbaki's single line of retreat was closed. In his retreat from the Lisaine this General reached Besançon January 22. Here he dallied about for four days : he then ordered a retreat to Lons le Saulnier, but the Germans had already anticipated him, and Von Werder was pressing on his rear, so he shot himself, but not fatally, and General Clinchamp took his place. But with the XIV. corps in his rear, and the VII. on its right, and the II. heading him at every possible exit from the trap in which his starving and horror-stricken army found itself, the new commander could only retire into Switzerland, February 2, after a series of running fights near Pontarliers, with 84,000 men in the last stages of destitution.

Manteuffel's operations have not had a parallel in modern war. Had Vandamme cut off the Germans at Kulm, after the battle of Dresden, his fame might have been as great. Not only was Manteuffel's strategy perfect, the execution of his design was a striking example of the perfection of the Prussian administration of supplies on the march. In sixteen days his force, with all its trains of necessaries and other impediments, crossed two ranges of mountains along bye-roads ; and, leaving enemies on each flank, and passing through one poor and hostile country, plunged into the heart of another equally poor and hostile, to intercept, and finally destroy, an army numerically twice as large.

An armistice had been made on January 28, applying to all the theatre except the south-east. Belfort surrendered with military honours on February 18, and the war was over. France was reeling under a succession of blows as heavy as the great Napoleon ever administered in 1805 and 1806 on the ancestors of her conquerors. She had to yield, and was heavily mulcted. She paid a tremendous fine. For her haste to enter into war with a light heart, she went out of it with a heavy one. To the loss of money she added the loss of territory. The Germans had again the Rhineland and Alsace,

and the old German Lorraine. But that the surrender was inevitable is clear from Blume's summary of the situation. More than 385,000 French soldiers, including 11,860 officers, were prisoners in Germany, and nearly 100,000 interned in Switzerland would have been led captive into Germany had hostilities broken out afresh. The prisoners included, with few exceptions, all the professional officers and trained soldiers that France possessed. The conquerors had taken all the warlike stores of three great armies and twenty-two captured fortresses, besides a number of guns, carriages, and weapons lost in different actions, amounting in all to 1835 field and 5373 garrison guns, and upwards of 600,000 small-arms. The *matériel* of Bourbaki's army, too, was not to be restored to the French till the war was over. The fleet was in a great measure disarmed; its officers, sailors, and stores had been expended on shore. One-third of all France was occupied by the German armies, and the capital, to which the provinces had been accustomed to look for guidance, was in their power. They had as yet, indeed, refrained from occupying Paris, and the omission may possibly have led people here and there to dream of re-victualling the city and resuming the defence. But 700 guns were mounted on or near the forts ready to nip any attempt at resistance in the bud.

Moreover, there were 569,875 German infantry, with 63,465 cavalry, and 1742 guns on French soil, March 1. But if the officers and officials, artillery and engineers, train and departments of all kinds were to be added, the total strength of the German armies would appear to be 1,000,000 men. Besides there were at home more than 250,000 men, reserve and garrison troops, available for garrison duty, guard of prisoners, and replacing the casualties in the active army.

Such is a short outline. Want of space forbids more details of the principal strategic features of this great struggle.

What is the lesson? That in peace time all the energy

of every Government should be devoted in the first place, quite irrespective of all other political and social and party considerations, to so developing and so disposing of the military resources of the country that they may all work simultaneously with the exactness and regularity of a perfect machine, when war comes, as come it must. Without such organisation success is impossible.

If ruin can be postponed for a period by reason of Sea Power or Fortresses, which can prevent or delay invasion, or mere good fortune, the unready Government may ultimately prevail, as did ours in South Africa, but only after an enormous waste of wealth and life.

APPENDIX A

MODERN SEA POWER *

"Brassey's Naval Annual Handbook" for 1902 gives the following figures, showing comparative strengths in ships built and building:

Class	Great Britain.	France.	Russia.	Italy.	Germany.	United States.	Japan.
Battleships—							
First Class . . .	41	13	15	9	16	17	6
Second „ . . .	11	10	10	5	—	—	—
Third „ . . .	17	15	8	2	15	11	2
Total Battleships .	69	38	33	16	31	28	8
Cruisers—							
First Class . . .	49	19	16	5	6	13	6
Second „ . . .	62	23	7	5	8	10	10
Third „ . . .	46	13	8	11	20	11	8
Total Cruisers .	157	55	31	21	34	34	24
Torpedo Gunboats . .	34	21	9	17	4	—	2

I have no desire to pose as an alarmist, and therefore do not quote the comments which accompany these tables.

The figures are simply brought forward by me to illustrate the

* From "Imperial Defence," by Col. E. S. May, C.M.G., R.A. (Swan Sonnenschein & Co.), by permission of the author.

changed situation in which we find ourselves when we compare the conditions which obtained in 1805 and 1872 with those of 1902. If in 1872 it were possible to say that "Prussia has three ironclads, none of which she has been able to build herself," or that the best of the five Russian ironclads was inferior to the *Warrior*, "one of our most inferior ironclads," or "if Prussia began to construct, we could build ten vessels to one she could build"; if under such conditions there was anxiety in the country, as there was, is it to be wondered at that there is in some quarters anxiety now? and is it not manifestly the fact that the old derision of anxiety has no longer any sting in it? and is not the case against invasion far less strong to-day than what it was thirty years ago?

But it is not only that our royal navy, strong as it is to-day, is nevertheless by no means so relatively powerful when compared with the other naval forces of the world as it was at the previous periods; but we are less secure owing to another circumstance—second line of defence used to lie in the inadequacy of the hostile transport that was available to convey an invading force to our shores.

In 1872 Russia had practically no seagoing steamers at all. That was the case with Germany also, according to the same authority.

The neutrality laws would prevent their hiring transport, we were told.

The Germans could not hire, and had no transport of their own, and so invasion by them was a mere chimera of the imagination. If such were the resources of North Germany in 1872, what a vast change do we discover to-day!

Out of the total of 596 vessels of over 5000 tons which all the countries of the globe possess Germany contributes 124, and Great Britain 346; the United States comes next with 36, and then France with 23.

The two largest steamship owners in the world are German companies, the Hamburg-American Line of Hamburg, with the total of 668,000 tons, and the Norddeutscher Lloyd, of Bremen, with 556,000 tons.

Next to these come Elder, Dempster & Co., of Liverpool, with the total of 386,000 tons.

Germany in 1901 owned a total of 1293 steamships of 100 tons and upwards, representing 2,417,410 tons France 679, representing 1,068,936 tons. The figures for other countries will be found on page 711 of "Whitaker's Almanac" for 1902.

It is unnecessary to give them here; those that I have mentioned are a sufficient answer to the question: "Where are they going to find their transport?"

As regards the number of ships that would be necessary to conveo a given force across the North Sea or Channel, we find ourselves in this difficulty, that all our figures are based on the experiences of expeditions involving a voyage of at least a fortnight. For a few hours men might be packed very closely indeed, how closely it would be somewhat difficult to say without actual experiment, but so closely, without a doubt, as to render any of the calculations I have already given quite valueless. An officer stated, at the time that the discussion took place at the Royal United Service Institution in 1872, that a first-class merchant-ship of the day could convey 3000 men for the short voyage involved.

Commander W. Dawson, R.N., estimated the necessary transport at 1000 men per ship of 2000 tons, the horses at 300 per ship of the same size.

. . . . . .

"The navy must keep the highways of the ocean and communications of the Empire always open to us, and must acquire, as early as possible, after war breaks out, such a mastery over the fleets of our opponents, that it may be possible to send our land forces on expeditions across the waves.

"When the navy has done that, it will have attained what we know as command of the sea, and until it has established that essential condition in all schemes for the defence of the Empire the task it is called upon to execute will remain unperformed, and the army must stand and wait for its accomplishment."

APPENDIX B

COAST DEFENCE

In his essay on "Coast Defence in Relation to War," circulated by the Navy League, Sir G. S. Clarke says:

"When the Navy suffices—not till then—let us begin to consider our fortifications. In the words of Lord Dundonald: 'There is no security equal to that which may be obtained by putting it out of the power of an enemy to execute hostile intentions.' I do not believe, however, that we are unable to create and maintain an adequate navy as well as the extremely moderate defences which alone we need. I merely protest against the false notion that there is any sort of interchangeability between the two, or that fixed defences can ever enable us to dispense with a single sea-going ship.

"The question of policy and the adoption of a true sense of scale should, I venture to think, come first. When these are settled, ring in the experts, and take particular care that they do not go back on every principle you have laid down. Designedly this paper has been made somewhat vague. I have not defined what strength is assigned to a naval raid, or laid down the measure of defence which I would provide in a given case. To do so would involve entering upon a variety of considerations foreign to my present purpose. The probable strength of what I have called a raid necessarily differs according to circumstances, political and geographical. The measure of necessary defence varies with the distance of a probable enemy's basis and with local hydrographical conditions. Before either can be intelligently considered, it is, therefore, imperative to arrive at certain general conclusions, naval in their very essence.

"The points which I have sought to emphasise may now be briefly summed:

"(1) The strength which the attack can assume depends entirely upon the naval conditions. Defended ports will not be attacked by expeditionary forces, except by a Power in full command of the waters which give access to them. Given this command, there is little limit to the strength that may be brought to bear against them.

"(2) Protection to ports containing resources necessary to the naval action of a great naval Power is always desirable; but it must be remembered in such a case that the protected port is of no value except on account of what the navy may be able to do outside it. To provide extravagant defences and to starve the naval resources is, therefore, an imbecile policy. The first consideration is the sufficiency of the naval resources; the second, the defences Similarly, protection is desirable for ports necessary to a mercantile marine in war; but, in the case of a Power which exists by commerce, this protection will not avail unless the sea approaches are guarded, which can be done only by a sea-going navy.

"(3) No practicable naval supremacy will ensure complete immunity from raids, which in the case of an enterprising enemy would be most probable at the outset of war. In such raids torpedo-boat attacks are obviously included where geographical conditions are favourable. While the right policy appears to be a vigorous offensive at sea, against the torpedo-boat, it is evidently futile to provide heavy armaments and remain unprepared against what might now be by far the most probable form of attack.

"(4) The defence of a port always implies the fulfilment of two separate conditions—protection of necessary resources against purely naval attack, and protection against military operations on shore. There is a back door which, as history clearly shows, is the one usually selected; and, in closing this back door,

Coast Defence proper, in spite of its many weapons, will generally render no assistance. But for the unique conditions of the land front of Gibraltar, the fortress would almost certainly have fallen.

"(5) Finally, the conditions of our national life are special and peculiar. We must fulfil their needs in our own way, and we cannot borrow a policy from the foreigner. Least of all is it rational to reply to Coast Defence by Coast Defence, as we have been sometimes invited to do, and as we actually did in 1859.

"In conclusion, I will only add that it is a change of attitude in regard to fixed defences which I advocate. I am no fanatical enemy to fortification, but only to its ill-considered and irrational application. For fortification, if carried beyond its due limits, if made an end and not a means, seems in all history to be either a sign or a promoting agent of national decadence. In a fine passage Gibbon has illustrated this characteristic of the later Roman Empire:

"'The fortifications of Europe and Asia were multiplied by Justinian; but the repetition of these timid and fruitless precautions exposes, to a philosophic eye, the debility of the Empire. From Belgrade to the Euxine, from the conflux of the Save to the mouth of the Danube, a chain of above fourscore fortified places extended along the banks of the great river . . . a strong fortress defended the ruins of Trajan's bridge, and several military stations affected to spread beyond the Danube the terror of the Roman name. But that name was divested of its terrors; the barbarians in their annual inroads passed and contemptuously repassed before these futile bulwarks, and the inhabitants of the frontier, instead of reposing under the shadow of the general defence, were compelled to guard, with incessant vigilance, their separate habitations. . . . The Straits of Thermopylæ, which seemed to protect, but which had so often betrayed the safety of Greece, were diligently strengthened. From the edge of the seashore, through the forests and valleys, and as far as the summits of the Thessalian mountains, a strong wall was continued which occupied every practicable entrance; granaries of corn and reservoirs of water were even provided for the garrisons,

and, by a precaution that inspired the cowardice it foresaw, convenient fortresses were erected for their retreat.'

"I am not sure that some future Gibbon will not characterise, in like phrase, certain of the projects of the present age."

The question of food supply of our isles, which may be likened to a vast imperial keep, in time of war is now relegated to a commission of inquiry.—EDITOR.

APPENDIX C

JAPANESE AND AMERICAN NAVAL POLICY 1894 AND 1898

The most interesting point in the Japanese and American operations, 1894 and 1898, was in connection with the means adopted to obtain that definite naval superiority—recognised by both the Americans and Japanese as the first essential—which could only be established by the destruction of the enemy's ships. In three separate instances the fleet had to rely upon the assistance of the army to effect this object, and each instance conveyed a lesson of its own. In the case of Port Arthur the operations were rendered futile, as regards their immediate objective, by the fault of the sea forces themselves, which, failing to maintain an uninterrupted watch on the harbour, gave Ting his chance of escape. In the case of Santiago the undertaking was within an ace of disaster, and only saved at the last moment by a timely and serious error on the part of the enemy. On this occasion the fault lay with the land forces, who failed to co-operate with the fleet on the only lines in which effective co-operation was possible. In the case of Wei-hai-wei the operations were a model, both as regards general idea and detail of execution, which deserved the rapid and complete success they achieved. These wars provided many other lessons in matters of detail. Perhaps, when all was considered, the most important lesson was a repetition of the often emphasised fact that rapid success in war depended chiefly on careful preparation. That preparation ought to include a clear plan of campaign—as far as it could be reasonably foreseen—whether it was to be offensive or defensive. In framing such a plan the Japanese left it to their military

experts to say what could and should be done on land, and to estimate the forces required, the routes to be followed, and the risks to be encountered there. Similarly they accepted the verdict of the naval authorities on all points which had to be settled on the water, including the means of dealing with the hostile fleet, the decision as to when the favourable moments for embarking the land forces had arrived, and the risks to be expected both by their own troops in transit on the water and by the mother country on the question of invasion, which was a matter entailing the transit of the enemy's troops. They also realised that the success of closely concerted action, such as took place at Wei-hai-wei, was dependent upon singleness of purpose with regard to the principal objective, and a loyal understanding between the naval and military commanders. The result was a campaign carried through with a *minimum* of mistakes, and from that example it was apparent that when the services relied upon each other to know their own business in their own element they mutually strengthened their position, for the Government was more likely to rely upon both when they were united in opinion than when they were divided.

See Lecture by Commander G. A. Ballard, R.N., at Aldershot Military Society, November 24th, 1903.

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